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ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL,
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821 AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION 1890-91.

Montreal:

PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON.

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The *List of Graduates* and the *Examination Papers* of the Session 1889-90 are published separately, and may be obtained on application to the Secretary, or through booksellers.

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UNIVERSITY OF TORONTO

Governing Body of the University.

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HIS EXCELLENCY THE RIGHT HONOURABLE LORD STANLEY OF PRESTON, G.C.B., P.C.,

GOVERNOR-GENERAL OF CANADA, ETC.

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[*Being the Members of the Royal Institution for the Advancement of Learning.*]

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MATTHEW HUTCHINSON, D.C.L., Representative Fellow in Law.
WILFRED T. SKAIFE, B.A. Sc., Representative Fellow in App. Science.
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MALCOLM C. BAKER, D.V.S., Representative Fellow in Comparative Medicine and Veterinary Science.

(The Governors, Principal and Fellows constitute, under the Charter, the Corporation of the University, which has the power, under the Statutes, to frame regulations touching the Courses of Study, Matriculation, Graduation and other Educational matters; and to grant Degrees.)

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[*And Secretary of the Royal Institution.*]

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SAMUEL R. BURRELL, Clerk, 171 Jacques Cartier Street.
OFFICE HOURS: 9 TO 5.

Professors Emeriti.

[*Retaining their Rank and Titles, but retired from the active work of Instruction.*]

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WILLIAM WRIGHT, M.D.
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Hon. R. G. LAFLAMME, D.C.L., Q.C.
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Emeritus Professor in the Faculty of Law.

G. E. FENWICK, M.D.
Emeritus Professor of Surgery.

MATTHEW HUTCHINSON, D.C.L.
Emeritus Professor in the Faculty of Law.

J. EMERY ROBIDOUX, D.C.L.
Emeritus Professor in the Faculty of Law.

Officers of Instruction.

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Principal, Logan Professor of Geology and Professor of Natural History. East Wing, McGill College

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REV. GEORGE CORNISH, M.A., LL.D.
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Professor of French Language and Literature. 39 McGill College Av.

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Sherbrooke Street.

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Cote St. Antoine.

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Professor of Chemistry, Faculty of Medicine. 54 Beaver Hall Hill.

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Professor of Logic, and John Frothingham Professor of Mental and Moral Philosophy. 111 Mackay Street

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Vice Dean and Professor of the Theory and Practice of Medicine. 49 Union Avenue.

BERNARD J. HARRINGTON, B.A., Ph.D., F.G.S.
David T. Greenshields Professor of Chemistry and Mineralogy, and Lecturer in Assaying and Mining. Wallbrae Pl., off 256 Univ. St.

THOMAS G. RODDICK, M.D.
Professor of Surgery and Clinical Surgery. 80 Union Avenue.

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Professor of Gynæcology. 109 Union Avenue.

HENRY T. BOVEY, M.A., A.M.I.C.E., M.I.M.E., Fellow Queen's College, Cambridge.
Dean of the Faculty of Applied Science, William Scott, Professor of Civil Engineering and Applied Mechanics. 31 Ontario Avenue.

CHARLES E. MOYSE, B.A. (London)
Molson Professor of English Language and Literature, Lecturer in History. 802 Sherbrooke.

JOHN S. ARCHIBALD, Q.C., M.A., D.C.L.
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C. H. McLEOD, Ma.E.
Professor of Descriptive Geometry and Superintendent of Meteorological Observatory. Observatory McGill College.

LEONIDAS HEBER DAVIDSON, Q.C., M.A., D.C.L.
Professor of Commercial Law. 61 Burnside Street, or 194 St. James.

FRANCIS J. SHEPHERD, M.D.
Professor of Anatomy. 152 Mansfield Street.

FRANK BULLER, M.D.
Professor of Ophthalmology and Otology. 123 Stanley Street.

JAMES STEWART, M.D.
Professor of Materia Medica and Therapeutics. 939 Dorchester Street.

GEORGE WILKINS, M.D.
Professor of Medical Jurisprudence and Lecturer in Histology. 898 Dorchester Street.

D. P. PENHALLOW, B. Sc. (Boston Univ.)
Professor of Botany. The Sherbrooke, Sherbrooke Street.

G. H. CHANDLER, M.A.
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T. WESLEY MILLS, M.A., M.D.
Professor of Physiology. McGill College

JAMES C. CAMERON, M.D.
Professor of Midwifery and Diseases of Children. 43 Belmont Street.

Rev. DANIEL COUSSIRAT, B.A., *Officier d' Academie.*
Professsor of Hebrew and Oriental Literature. 106 Shuter Street.

A. J. EATON, M.A., Ph.D. (Leipsic)
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ARCHIBALD McGOUN, M.A., B.C.L.
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DUNCAN McEACHRAN, F.R.C.V.S., D.V.S.
Dean of the Faculty of Comparative Medicine and Veterinary Science and Professor of Veterinary Medicine and Surgery. 6 Union Avenue.

MALCOLM C. BAKER, D.V.S.
Professor of Veterinary Anatomy. 6 Union Avenue.

CHARLES McEACHRAN, D.V.S.
Professor of Veterinary Obstetrics and diseases of Cattle. 6 Union Avenue.

JOHN COX, M.A. (Cantab.), late Fellow Trin. Col., Cambridge.
William C. McDonald Professor of Experimental Physics. McGill College.

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THOMAS FORTIN, LL.L.
Professor of Civil Procedure and Municipal Law. 1613 Notre Dame Street.

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Professor of Notarial Law. 157 St James Street.

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HARRY ABBOTT, Q.C., B.C.L. *Professor of Commercial Law.*	11 Hospital Street.
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P. TOEWS, M.A. *Lecturer in German Language and Literature.*	34 Lorne Avenue.

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JAMES BELL, M.D. *Lecturer in Clinical Surgery.*	53 Union Avenue.
FRANK D. ADAMS, M.A.Sc., *Lecturer in Geology, Lithology, Arts and Applied Science.*	41 McGill College Avenue.
WILLIAM R. SUTHERLAND, M.D. *Curator of Medical Museum and Asst. Dem. of Anatomy.*	764 Sherbrooke Street.
GEORGE W. MAJOR, B.A., M.D. *Instructor in Laryngology.*	82 Union Avenue.
ALEXANDER D. BLACKADER, B.A., M.D. *Instructor in Diseases of Children.*	70 Beaver Hall Hill.
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F. G. FINLEY, M.D. *Assistant Demonstrator of Anatomy.*	801 Dorchester Street.
H. S. BIRKETT, M.D. *Assistant Demonstrator of Anatomy.*	123 Stanley Street.
E. H. HAMILTON, B.A.Sc. *Assistant to Superintendent of Meteorological Observatory.*	Observatory, McGill College.
PERCY N. EVANS, B.A.Sc. *Assistant to Professor of Chemistry, Arts and Applied Science.*	21 Milton Street.
JAMES NAISMITH, B.A. *Instructor in Gymnastics.*	

DONALDA SPECIAL COURSE.

MISS HELEN S. GAIRDNER, Lady Superintendent.	47 Victoria Street.
MISS. HELEN O. BARNJUM, *Instructress in Gymnastics.*	24 Union Avenue.

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MR. H. MOTT, *Library Assistant.*	Library, McGill College.

General Statement.

SESSION OF 1890-91.

The Fifty-eighth Session of the University, being the Thirty-seventh under the amended Charter, will commence in the Autumn of 1890.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the Statutes framed by the Board of Governors, with approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties, in McGill College, and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational; and while all possible attention will be given to the character and conduct of students, no interference with their peculiar views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions, of eight months each; and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language or Hebrew. The course of study is, with few exceptions, the same for all students in the first two years; but in the third and fourth years extensive options are allowed, more especially in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, English Literature and Modern Languages. Certain exemptions are also allowed to professional Students. The course of study leads to the Degrees of B.A., M.A., and LL.D.

The Degree of B.A. from this University admits the holder to the study of learned professions without preliminary examination, in the Provinces of Quebec and Ontario, and in Great Britain and Ireland, &c.

THE DONALDA SPECIAL COURSE IN ARTS provides for the education of women, in separate classes, with course of study, exemptions and honours similar to those for men

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions, of six months each, and one Summer Session of three months in the third Academic Year, and leads to the Degree of M.D., C.M.

THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.—The complete course extends over three Sessions of six months each, and leads to the Degree of D.V.S.

THE FACULTY OF LAW.—The complete course in Law extends over three Sessions of six months each, and leads to the Degrees of B.C.L. and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms with the Students of McGill College.

MORRIN COLLEGE, *Quebec*.—Is affiliated in so far as regards Degrees in Arts and Law. [Detailed information may be obtained from REV. JOHN COOK, D.D., Principal.]

ST. FRANCIS COLLEGE, *Richmond, P. Q.*—Is affiliated in so far as regards the Intermediate Examinations in Arts. [Detailed information may be obtained from A. W. BANNISTER, M.A., Principal.]

THE STANSTEAD WESLEYAN COLLEGE, *Stanstead, P. Q.*—Is affiliated in so far as regards the Intermediate Examination in Arts. [Detailed information may be obtained of REV. F. MCAMMOND, B.A., Principal.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their Students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on, and a number of Free Tuitions are granted by the Board of Governors to the Students of these Colleges, when matriculated in Arts.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal*. Principal, REV. WILLIAM M. BARBOUR, D.D., 58 McTavish St.

THE PRESBYTERIAN COLLEGE, MONTREAL, in connection with the Presbyterian Church in Canada. Principal, REV. D. H. MACVICAR, D.D., LL.D., 69 McTavish St.

THE DIOCESAN COLLEGE OF MONTREAL. Principal, REV. CANON HENDERSON, M.A., D.D., 896 Dorchester St.

THE WESLEYAN COLLEGE OF MONTREAL. Principal, REV. GEORGE DOUGLASS, LL.D., 228 University St.

[Calendars of the above Colleges and all necessary information may be obtained on application to their Principals.]

IV. McGILL NORMAL SCHOOL.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas, and may, on conditions stated in the announcement of the School, enter the classes in the Faculty of Arts for Academy Diplomas and for the Degree of B.A. Principal, S. P. ROBINS, LL.D., 30 Belmont St., Montreal.

V. AFFILIATED HIGH SCHOOLS, ETC.

The Trafalgar Institute for the higher education of women, Simpson St., Montreal; Principal, Miss Grace Fairley. The High School of Montreal, Metcalfe St.; Principal, H. Aspinwall Howe, LL.D. The Girls' High School of Montreal, Metcalfe St.; Lady Principal, Mrs. H. H. Fuller.

Schools which have prepared successful candidates for A.A. *or for matriculation (June,* 1890.)

High School, Montreal; Girls' High School, Montreal; Misses Symmers and Smith's School, Montreal; Mrs. Watson's School, Montreal; High School, Quebec; Girls' High School, Quebec; Girls' High School, St. John, N.B.; Aylmer Model School; Coaticook Academy; Cookshire Model School; Cowansville Academy; Danville Model School; Granby Academy; Huntingdon Academy; Inverness Academy; Knowlton Academy; Lachute Academy; St. Francis College School, Richmond; Sherbrooke Boys' Academy; Sherbrooke Girls' Academy; Stanstead Wesleyan College; St. John's High School; Sutton Model School; Waterloo Academy; Brockville Collegiate Institute; Glencoe High School; Goderich High School; Eliock School, Montreal; Ottawa Collegiate Institute; Parkhill High School; Parkdale Collegiate Institute.

ACADEMICAL YEAR 1890-91.

SEPTEMBER, 1890.

1 Monday	Normal School opens.
2 Tuesday	
3 Wednesday	Meeting of Normal School Committee.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	Mat. and Sup. Exn's in Classics Exhib. and Scholarship Exam. Meeting of Faculty of Law.
16 Tuesday	Mat. and Sup. Ex'ns in Math's Exhib. & Scholarship Exam.
17 Wednesday	Mat. & Sup. Ex'ns in English, Logic, Men. and Mor. Phil. Exhib. and Sch. Exm'ns.
18 Thursday	Mat. & Sup. Ex'ns in Modern Lang's and Nat. Sc.; Exhib. and Sch. Exam'ns.
19 Friday	Exhib. and Sch. Ex'ns. Lect's in Arts and App. Sc. begin.
20 Saturday	
21 SUNDAY	
22 Monday	Meeting of Faculty of Arts.
23 Tuesday	
24 Wednesday	Matric. Exam. in Law.
25 Thursday	Summer Essays in Applied Sc.
26 Friday	Matric. Exam. in Medicine. Meeting of Governors. Register Medical Faculty opens.
27 Saturday	Meeting of Faculty of Law.
28 SUNDAY	
29 Monday	
30 Tuesday	Meeting of Fac. of App. Sc.

OCTOBER, 1890.

1 Wednesday	Session of Medical and Law Faculties begins. Meeting Nor. School Committee.
2 Thursday	
3 Friday	Meeting Faculty of Arts.
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	Founder's Birthd'y. The Wm. Molson Hall opened, 1862.
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	Meeting of Faculty of Law.
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	Meeting of Faculty of Arts.
18 Saturday	
19 SUNDAY	
20 Monday	Meeting of Museum Com.
21 Tuesday	Meeting of Library Com.
22 Wednesday	Regular Meeting of Corporation Reps Schol. & Exh. Ac. and School Exams Appd.
23 Thursday	
24 Friday	Meeting of Governors.
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	Meeting of Faculty of Arts.

NOVEMBER, 1890.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	Meeting of Fac. App. Science.
5 Wednesday	Meeting Normal School Com.
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	Meeting of Faculty of Law.
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	Meeting of Faculty of Arts.
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	Meeting of Governors.
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	
27 Thursday	
28 Friday	Meeting of Faculty of Arts.
29 Saturday	
30 SUNDAY	

DECEMBER, 1890.

1 Monday	
2 Tuesday	Meeting of Faculty of App. Sc.
3 Wednesday	Meeting of Nor. Sch. Comm.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	Meeting of Faculty of Law.
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	Meeting of Fac. of Arts. Lectures in Arts and Ap. Sc. end.
13 Saturday	Exam. Bot. Med. Students. Examinations in Law.
14 SUNDAY	
15 Monday	Christmas Examinations begin.
16 Tuesday	
17 Wednesday	Examinations in Law.
18 Thursday	Examinations in Law. [in Law.
19 Friday	Meeting of Governors. Exams'
20 Saturday	Christmas Vacation begins. Examinations in Law.
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	
25 Thursday	Christmas-Day.
26 Friday	
27 Saturday	
28 SUNDAY	
29 Monday	
30 Tuesday	
31 Wednesday	

JANUARY, 1891.

1 Thursday	
2 Friday	
3 Saturday	Christmas Vacation ends.
4 SUNDAY	
5 Monday	Lectures in Arts, Law, Med. & App. Sci. recommence.
6 Tuesday	Meeting of Fac. of App. Sci.
7 Wednesday	Meeting of Nor. Sc. Comm.
8 Thursday	
9 Friday	Meeting of Faculty of Arts.
10 Saturday	
11 SUNDAY	
12 Monday	Meeting of Faculty of Law.
13 Tuesday	
14 Wednesday	
15 Thursday	
16 Friday	Meeting of Faculty of Arts.
17 Saturday	
18 SUNDAY	
19 Monday	Meeting of Museum Com.
20 Tuesday	Meeting of Library Com. and of School Examiners.
21 Wednesday	Regular Meet'g of Corporation.
22 Thursday	Examiners appointed. Annual
23 Friday	Report to Visitor.
24 Saturday	Meeting of Governors.
25 SUNDAY	
26 Monday	
27 Tuesday	
28 Wednesday	
29 Thursday	
30 Friday	Theses for M.A.&LL.D. to be
31 Saturday	sent in to the Dean of Fac. of Arts. Meeting of Fac. of Arts and University Examiners.

FEBRUARY, 1891.

1 SUNDAY	
2 Monday	Theses for Deg. of B.C.L. to be sent in to Dean of Fac. of Law
3 Tuesday	Meeting of Fac. App. Science.
4 Wednesday	Meeting of Nor. Sch. Comm.
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	Meeting of Faculty of Law.
10 Tuesday	
11 Wednesday	No Lectures.
12 Thursday	
13 Friday	Meeting of Faculty of Arts. Supplemental Exam's in Arts and Applied Science.
14 Saturday	
15 SUNDAY	
16 Monday	
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	Meeting of Governors.
21 Saturday	
22 SUNDAY	
23 Monday	
24 Tuesday	Theses for Degree of B.C.L. to
25 Wednesday	be sent in to Dean of Faculty
26 Thursday	
27 Friday	Meeting of Faculty of Arts.
28 Saturday	

MARCH, 1891.

1 SUNDAY	
2 Monday	Theses for degree of B.C.L to be sent in to Dean of Faculty.
3 Tuesday	Meeting of Fac. of Ap. Science.
4 Wednesday	Meeting of Nor. Sc. Com.
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	Meeting of Faculty of Law.
10 Tuesday	
11 Wednesday	
12 Thursday	
13 Friday	Meeting of Fac. of Arts.
14 Saturday	Examinations in Law, and
15 SUNDAY	Botany Med. Fac.
16 Monday	
17 Tuesday	Meeting Fac. App. Sci.
18 Wednesday	Lectures in Medicine end.
19 Thursday	Exam's in Med. begin.
20 Friday	Meeting of Fac. of Arts. Reports of Attendance on Lects.
21 Saturday	
22 SUNDAY	
23 Monday	
24 Tuesday	
25 Wednesday	
26 Thursday	Lects. in Arts and Ap. Sc. end.
27 Friday	Good Friday. Easter Vac. begins
28 Saturday	Meeting of Governors.
29 SUNDAY	Easter.
30 Monday	
31 Tuesday	Easter vacation ends. Meeting of Fac. of Ap. Science

APRIL, 1891.

1 Wednesday	and Convocation for Degrees
2 Thursday	in Medicine.
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	Meeting of Nor. Sc. Committee
9 Thursday	
10 Friday	Meeting of Fac. of Arts.
11 Saturday	Exams. in Law begin.
12 SUNDAY	
13 Monday	Meeting of Faculty of Law.
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	Meeting of Museum Committee
21 Tuesday	Meeting of Library Committee
22 Wednesday	Regular meeting of Corporation.
23 Thursday	Meeting of Examiners, & of Fac. Arts and Law.
24 Friday	Meeting of Governors.
25 Saturday	Declaration of result of Exam's.
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	Convocation for Degrees in Law and Applied Science.
30 Thursday	Convocation for Degrees in Arts.

MAY, 1891.

1 Friday	Meeting of Examiners for Sch. Examinations. Examinations in Normal School begin.
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	
6 Wednesday	Meeting Nor. Sch. Committee.
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	
17 SUNDAY	Whit-Sunday.
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	Meeting of Governors.
23 Saturday	
24 SUNDAY	Trinity Sunday. Queen's Birthday.
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	Normal Sch. closes for Summer Vacation.
30 Saturday	
31 SUNDAY	

JUNE, 1891.

1 Monday	Examinations for Matric. and Associate in Arts begin.
2 Tuesday	
3 Wednesday	Normal School Committee.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	
17 Wednesday	
18 Thursday	
19 Friday	Declaration of results of School Examinations.
20 Saturday	
21 SUNDAY	
22 Monday	Meeting of Museum Committee.
23 Tuesday	Meeting of Library Committee.
24 Wednesday	Regular Meeting of Corporat'n. Report of Normal School.
25 Thursday	
26 Friday	Meeting of Governors.
27 Saturday	
28 SUNDAY	
29 Monday	
30 Tuesday	Summr. Sessn. Med. Fac. ends.

JULY, 1891.

1 Wednesday	
2 Thursday	
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	
21 Tuesday	
22 Wednesday	
23 Thursday	
24 Friday	
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	

AUGUST, 1891.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	
5 Wednesday	
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	
15 Saturday	Peter Redpath Museum opened 1882.
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	
27 Thursday	
28 Friday	
29 Saturday	
30 SUNDAY	

FACULTY OF ARTS.

EXHIBITION, SCHOLARSHIP, &c., EXAMINATIONS, SEPTEMBER, 1890.

DAY.	DATE	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	HOURS.
Monday.	15	Greek.	Greek.	Greek.	9 to 12
"	15	Latin.	Latin.	Latin Prose Comp.	2 to 5
"	15			Mathematics.	9 to 12
Tuesday.	16	Mathematics.	Mathematics.	Latin.	9 to 12
"	16			Mathematics.	9 to 12
"	16			Botany.	9 to 12
"	16	Mathematics.	Mathematics.	Ancient History.	2 to 5
"	16			Botany.	2 to 5
Wednesday.	17	English.	English.	English.	9 to 12
"	17			Logic.	9 to 12
"	17	English.		English.	2 to 5
"	17		Chemistry.	Chemistry.	2 to 5
Thursday.	18			Mathematics.	9 to 12
"	18			Botany.	9 to 12
"	18		French.	French.	9 to 12
"	18	Grammar and Comp. (Classics.)	General Paper. (Classics.)	English Composition	2 to 5
Friday.	19		Mathematics.	Mathematics.	9 to 12
			English.		2 to 5

CHRISTMAS EXAMINATIONS, DECEMBER, 1890.

DAY.	DATE	FIRST YEAR	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
Monday.	15	Latin.	Latin.	Mechanics.	Astronomy.
"	15		M'matics, P.M.		
Tuesday.	16	Greek.	Botany.	Greek.	Greek.
"	16				Latin, P.M.
Wednesday.	17	Mathematics.	Psychology.	Latin.	Moral Philosophy
"	17	French, P.M.	French, P.M.	Zoology, P.M.	Geology, P.M.
Thursday.	18	Chemistry,	Greek.		
"	18	German, P.M.	German, P.M.		
"	18	Hebrew, P.M.	Hebrew, P.M.		
Friday.	19	English.		Ment. Phil.	

FACULTY OF ARTS.

SESSIONAL AND HONOUR EXAMINATIONS, APRIL, 1891.

Day.	First Year.	Second Year.	Third Year.	Fourth Year.
April.	A.M. P.M.	A.M. P.M.	A.M. P.M.	A.M. P.M.
1 Wed.	Hebrew and German.	Hebrew and German.....	Hebrew and German	Hebrew and German. B.A. Honours.
2 Thurs.	Greek.....	Greek.....	Mechanics.....	Ethics. Ethics.
3 Fri.	Latin....Anc. History	Latin. Composition	Latin.....	Latin. Latin.
6 Mon.	English.....	English. English.	Ex. Phy- English. sics.	Ex. Phy- History. sics.
8 Wed.	Geometry and Arithmetic. ...	Mathematics.....	Greek.....	Mechanics and B.A. Honours.
10 Fri.	Trigonometry and Algebra.....	Mathematics...	Astronomy and .... Optics..... ..	Astr'y and Optics. B.A. Honours.
13 Mon.	French.....	French.....	Metaphysics.....	Geology. Geology.
14 Tues.	Chemistry.....	.....	.... Zoology	Greek. History.
15 Wed.	.....	Logic.....	.....	.....
16 Thurs.	.....	Botany.....	French.....	French; B.A. Honours.
17 Fri.	.....	....	.....	B.A. Honours.
18 Sat.	Meeting of	Examiners.		
20 Mon.	Meeting of	Examiners.		
21 Tues.	Honour Examinations	Honour Examinations	Honour Exam'tions	B.A. Honours.
22 Wed.	Meeting of	Examiners.	Meeting of	Corporation.
23 Thurs.	Honour Examinations	Honour Examinations	Honour Exam'tions	B.A. Honours.
24 Fri.	Meeting of	Examiners.		
25 Sat.	Meeting of	Examiners.	Declaration	of results.
30 Thurs.	Convocation for Degrees in Arts.			

The Examinations begin at 9 A.M. and 2 P.M. when not specified otherwise

FACULTY OF APPLIED SCIENCE.

EXAMINATIONS.—1890-91.

CHRISTMAS, 1890.

The days of the several Examinations will be announced by the Faculty during the Session.

SESSIONAL, 1891.

Days.	First Year.	Second Year.	Third Year.	Fourth Year.
S. Mar. 28		Descrp've Geometry	Descrp've Geometry	
Sun. " 29	.....	.....	.....	.....
M. " 30	Freehand & Model Drawing.		Theory of Structures	Theory of Structures.
T. " 31		Surveying.	Mach. & Millwork Surveying.	Mach. & Millwork Mineralogy (adv).
W. April 1	German.	German.	Theory of Structures	Assaying Theo. of Structures
T. " 2		Materials.	Materials.	Materials.
F. " 3		Mechanism.		
S. " 4		Pract. Construction.	Pract. Construction.	Pract. Construction.
Sun. " 5	.....	.....	.....	.....
M. " 6	English.	Exp. Physics.	Exp. Physics.	Theory of Structures.
T. " 7		Practical Chemistry.	Practical Chem. Th. of Struc. (adv.)	Theory of Structures (adv.)
W. " 8		Essay.	Essay.	Essay.
T. " 9	Mathematics.	Mathematics.	Mathematics.	
F. " 10			Mach. & Millwork	Theo. of Structures Geology (adv.)
S. " 11	Mathematics.	Mathematics.	Mathematics.	Theory of Structures (adv.)
Sun. " 12	.....	.....	.....	.....
M. " 13	French.	French.	Mechanical Work.	Mech. Work.
T. " 14	Chemistry.	Zoology (p.m.) Chemistry (a.m.)	Geology. Chemistry.	Chemistry.
W. " 15		English.	English.	Heat.
T. " 16		Botany.	French.	Heat (adv.).
F. " 17				Hydraulics.
S. " 18	Mathematics.	Mathematics.	Mathematics.	Hydraulics (adv.).
Sun. " 19	.....	.....	.....	.....
M. " 20				
T. " 21			Mineralogy (adv.)	Geology (adv.).
W. " 22				
T. " 23			Mineralogy (adv.)	Petrography

Faculty of Arts.

THE PRINCIPAL (Ex-officio).

Professors :—DAWSON.
JOHNSON.
CORNISH.
DAREY.
MURRAY.
HARRINGTON.
MOYSE.

Professors :—PENHALLOW.
COUSSIRAT.

Assistant Prof :—EATON.

Lecturers :—CHANDLER.
LAFLEUR.
TOEWS.
ADAMS.

Dean of the Faculty :—ALEXANDER JOHNSON, LL.D.
Honorary Librarian :—REV. GEO. CORNISH, LL.D.

[CONTENTS.—*Matriculation*, &c., § I.; *Exhibitions*, &c., § II.; *Course of Study*, § III.; *Examinations, Degrees*, &c., § IV.; *Exemptions*, &c., ¾ V.; *Medals*, &c., § VI.; *Licensed Boarding Houses*, § VII.; *Attendance and Conduct*, ¾ VIII.; *Library*, ¾ IX.; *Peter Redpath Museum*, ¾ X.; *Fees*, &c., ¾ XI; *Courses of Lectures*, ¾ XII.]

The next session of this Faculty will begin on September 15th, 1890, and will extend to April 30th, 1891.

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§ I. MATRICULATION AND ADMISSION.

In this University those only who attend Lectures are denominated Students.

Students in the Faculty of Arts are classified as Matriculated or Occasional. Matriculated Students are those who have their names entered in the Matriculation Book; they are subdivided into Undergraduates and Partial Students; Non-matriculated are denominated Occasional Students. The conditions of admission for each, and for Students of other Universities are given below.

I. UNDERGRADUATES.

Undergraduates alone can proceed to the degree of B. A. Candidates for admissionin to the First Year as Undergraduates are required to pass the First Year Entrance Examination. The successful Candidates are arranged as First Class, Second Class, and

Passed. To the most deserving in the First Class the First Year Exhibitions are awarded. For those who aim at passing only, a minimum course is appointed, and there are two examinations in the year as follows :—

(1) That held in the first week of June, at the same time as the examinations for Associate in Arts. Schools desirous to take advantage of this may send their pupils for examination to McGill College ; or, if at a distance, by sending in names of Deputy Examiners for approval, with a list of Candidates on or before May 1st, may have papers sent to them. (2) That held at the opening of the session, on September 15th and following days, in McGill College alone.

As the examination is intended as a test of qualification for admission to the classes of the University, certificates of passing are not granted except to those who subsequently attend lectures.

First Year Entrance Examinations.

(a) For Passing only.

Examinations beginning on June 2nd in McGill College and local centres ; on September 15th in McGill College only.

Greek.—Xenophon, Anabasis, Book I. ; Greek Grammar.

Latin.—Cæsar, Bell. Gall., Book I. ; and Virgil, Æneid, Book I., lines 1–300 ; Latin Grammar.

Mathematics.—Arithmetic ; Algebra to Simple Equations (inclusive), Euclid's Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar, *including Analysis*. A paper on the leading events of English History. Essay on a subject to be given at the time of the examination.

French.—Grammar up to the beginning of Syntax. An easy translation from French into English.

Candidates unable to take French are not excluded, but will be required to study German after entrance.

At the September (but not at the June) examinations an equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners on application made through the Professor of Classics. At the June examination, Candidates from Ontario may present an equivalent amount from the books prescribed for the Junior Matriculation Examination of the University of Toronto.

Candidates who at the Examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

For Candidates from Ontario, Second Class non-professional certificates will be accepted *pro tanto* in the Examination.

Candidates who fail in one or more subjects at the June examination and present themselves again in September will be exempted from examination in those subjects only in which the examiners may have reported them as specially qualified.

(*b*) *Higher Examination—For First Class, Second Class, Passing and Exhibitions.*

The examination will be held on September 15th and following days in McGill College only. (For Exhibitions, see § II.)

Greek.—Homer, Iliad, Bk. IV.; Xenophon, Anabasis, Bk. I.; Demosthenes, Philippics I. and II.

Latin.—Cicero, in Catilinam, Orat. II.; Virgil, Æneid, Bk. I.; Cæsar, Bell. Gall., Bk. I.

A paper on Greek and Latin Grammar.

Text-books.—Hadley's or Goodwin's Greek Grammar. Arnold's Greek Prose Composition, Exercises 1 to 25. Dr. Wm. Smith's Smaller Latin Grammar, and Principia Latina, Part IV.; or Arnold's Latin Prose Composition by Bradley.

Mathematics.—Euclid, Bks. I., II., III., IV.; Algebra to end of Harmonical Progression (Colenso); Arithmetic.

English.—English Grammar and Composition.—(Mason's Grammar, omit Derivation and Appendix.)

French.—As above, with the same alternative.

Second Year Entrance Examination.

Candidates may be admitted into the Second Year as Undergraduates, if able to pass the Second Year Entrance Examination. The regulations for this correspond to those for the First Year, the higher examination being the same as that for the Second Year Exhibitions (see § II.) held in September, or the Candidates may take the First Year Sessional Examinations held in April. There is besides,

For Passing only.

An Examination beginning on Sept. 15th, in McGill College only.

In Classics.—*Greek.*—Homer, Iliad, Book VI.; Xenophon, Anabasis, Book I. Grammar and Prose Composition.

Latin.—Virgil, Æneid, Book VI.; Cicero, Orations against Catiline; Grammar and Prose Composition.

[An equivalent amount of other books or other authors in Latin and Greek than those named above may be accepted by the Examiners for entrance into the Second Year, on application made through the Professor of Classics.]

In Mathematics:—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (Omitting Propositions 27, 28, 29 of Book VI.)

Algebra.—To end of Quadratic Equations. (Colenso's Alg.)

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary rules, Proportion, Interest, Discount, &c., Vulgar and Decimal Fractions, Square Root.

In English Literature.—Writing from Dictation, English Grammar, including Analysis, English Composition, English History (Buckley). Essay.

In French.—French Grammar; or (instead of French) *German*, in which knowledge sufficient to enable the Candidate to join the regular class will be required.

In Chemistry.—The Chemistry of the non-metallic Elements, and of the more common metals.

[*Note.*—Candidates unable to pass in French or German are not excluded, but they are required to begin German, and to continue the study of it for two years.]

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2. PARTIAL AND OCCASIONAL STUDENTS.—STUDENTS OF OTHER UNIVERSITIES.

PARTIAL STUDENTS.—Candidates for Matriculation as Partial Students, taking three or more courses of Lectures, will be examined in the subjects necessary thereto, as may from time to time be determined by the Faculty.

The subjects in which an examination is necessary are: Latin, Greek, Mathematics, English, French.—Candidates are required to appear at the ordinary entrance examinations announced above; but, on application to the Faculty, may, for sufficient cause, have a later day appointed.

OCCASIONAL STUDENTS.—Persons desirous of taking one or two courses of Lectures as Occasional Students may apply to the Dean for entry in his Register, and to the professor or the professors of the subjects of the lectures, that they may be satisfied of their fitness, and may subsequently procure from the Secretary tickets for the Lectures.

STUDENTS OF OTHER UNIVERSITIES may be admitted, on the production of Certificates, to a like standing in this University, after examination by the Faculty.

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3. GENERAL REGULATIONS.

Candidates for entrance into the First Year of the Faculties of Medicine or Applied Science in McGill University may pass in the above examinations.

Every Student is expected to present, on his entrance, a written intimation from his parent or guardian of the name of the minister of religion under whose care and instruction it is desired that the Student should be placed, who will thereupon be invited to put himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavour to establish befitting relations.

Every matriculated Student is required to sign in the Matriculation Book the following : —

DECLARATION.

"I hereby declare that I will faithfully observe the statutes, rules and ordi-
"nances of this University of McGill College to the best of my ability."

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4. DIRECTIONS TO CANDIDATES FOR ADMISSION.

Candidates are required :—

(*a*) To present themselves to the Dean, and fill up a form of application for admission. (§ I.)

(*b*) To pass the required examinations (§ I.). (Unless already passed.)

(*c*) To procure tickets from the Registrar (§ XI.), and, if not Occasional Students, to sign the Matriculation Book.

(*d*) To present their tickets to the Dean. (§ XI.)

(*e*) To provide themselves with the Academic dress. (§ VIII.)

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§ II. SCHOLARSHIPS AND EXHIBITIONS.

GENERAL REGULATIONS.

1. A Scholarship is tenable for *two* years. An Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three sessions have elapsed since their Matriculation ; and also to Candidates who have obtained

what the Faculty may deem equivalent standing in some other University, provided that application be made before the end of the Session preceding the examination.

3. Scholarships are divided into two classes :—(1) *Science* Scholarships ; (2 *Classical and Meaern Language* Scholarships. The subjects of examination for each are as follows :—

Science Scholarships.—Differential and Integral Calculus ; Analytic Geometry ; Plane and Spherical Trigonometry ; Higher Algebra and Theory of Equations ; Botany ; Chemistry ; Logic. (For subdivision see below.)

Classical and Modern Language Scholarships.—Greek ; Latin ; English Composition ; English Language, Literature, and History ; French or German.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to Candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two Sessions have elapsed since their Matriculation ; and also to Candidates for entrance into the Second Year.

The subjects of examination are as follows :—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry and French or German.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time ; but four of the First Year Exhibitioners will be granted exemption from the Sessional fees throughout their College Course, under Presentation Scholarships from the Governor General. (See below.)

7. Exhibitions and Scholarships will not necessarily be awarded to the best answerers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of Candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving Candidates in another year.

9. A successful Candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February, and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every session.

There are at present fifteen Scholarships and Exhibitions: —

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank, Montreal:—value, $100 yearly, open to both men and women.

TEN MCDONALD SCHOLARSHIPS AND EXHIBITIONS, founded by W. C. McDonald, Esq, Montreal:—value, $125 each, yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects: —value, $120 yearly.

THE GEORGE HAGUE EXHIBITION, given by George Hague, Esq., Montreal, for the encouragement of the study of Classics:—value, $125 yearly.

THE MAJOR H. MILLS SCHOLARSHIP, founded by bequest of the late Major Hiram Mills:—value, $100 yearly.

THE BARBARA SCOTT SCHOLARSHIP, founded by the late Miss Barbara Scott, for the encouragement of the study of the Classical languages and literature:—value, $100 to $120 yearly.

EXHIBITIONS AND SCHOLARSHIPS OFFERED FOR COMPETITION AT THE OPENING OF THE SESSION, SEPT., 1890.

To Students entering the First Year, three Exhibitions of $125, *and one of* $100.

The First Year Exhibitions will be awarded to the best answerers in the First Year Higher Entrance Examination (see § I.), provided there be absolute merit.

But in subsequently distributing the Exhibitions of higher value among the successful Candidates, answering in the following subjects will be taken into account also:—

1. A re-translation into Latin of an English version of some passage from one of the easier Latin Prose writers. (For specimens see Smith's Principia Latina Part V.)

2. Euclid, Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. English:—An Examination upon one of Shakspere's plays. For 1890.—*Coriolanus.*

4. French:—Syntax and translation from English into French, in addition to the Entrance course.

To Students entering the Second Year, two Exhibitions of $125, *and one of* $100.

Subjects of Examination:—

Greek.—Homer, Odyssey, Bk. VII.; Herodotus, Bk. III., chaps. 1 to 67; Demosthenes, Olynthiacs I. and II.

Latin.—Virgil, Georgics, Bk. I.; Horace, Odes, Bk. I.; Livy, Bk. XXIII.

Greek and Latin Prose Composition.

A paper on Grammar and History.

Text-books.—Cox's General History of Greece. Merivale's General History of Rome. Goodwin's Greek Grammar. Arnold's Greek Prose Composition. Latin Prose through English Idiom (Abbott).

Mathematics.—The Mathematics (Ordinary and Honour) of First Year.

English Literature.—Mason's Grammar. Shakspere, *As You Like it.* Trench, *Study of Words.*

Chemistry.—Roscoe's Lessons in Elementary Chemistry as far as p. 264.

French.—Darey, Principes de Grammaire française; Lafontaine, les Fables, livres I. and II.; Molière, L'Avare.

Or, instead of French,

German.—German Grammar.—Grimm, Kinder und Hausmærchen; Schiller, Der Gang nach dem Eisenhammer.

A candidate for a Second Year Exhibition to be successful must not, at the special examination, be placed in the Third Class in more than one of the ordinary subjects. The award is made on the aggregate of the marks among those who fulfil this condition.

To Students entering the Third Year, Four Scholarships of $125, *and one of* $120, *tenable for two Years.*

Two of these are offered in Mathematics and Logic, and one in Natural Science and Logic, as follo ws:—

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 7, 9; Chap. 12, Arts. 168-183 inclusive; Chap. 17, Arts. 225-242 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126-140 inclusive; Chap. 8, Arts. 150-156 inclusive; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (Salmon's Conic Sections, subjects of Chaps. 1-13 [omitting Chap. 8], with part of Chap. 14). Lock's Higher Trigonometry; McLelland and Preston's Spherical Trigonometry, Part I. Salmon's Modern Higher Algebra (first four chapters). Todhunter's or Burnside and Panton's Theory of Equation (selected course).

   Logic, as in Jevons' Elementary Lessons on Logic.

2. *Natural Science.*—*Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with all the orders of Phænogams, Pteridophytes and Bryophytes. *Chemistry*, as in Roscoe's Lessons in Elementary Chemistry.

   Logic, as in Jevons' Elementary Lessons on Logic.

Two will be given on an Examination in Classics and Modern Languages, as follows:—

Classics—*Greek.*—Euripides, Medea; Demosthenes, the Olynthiacs; Xenophon, Hellenics, Book I.; Herodotus, Book VIII.; Thucydides, Book VI. *Latin.*—Horace, Satires, Book I., and Epistles, Book I.; Virgil, Georgics, Book I.; Terence, Adelphi; Tacitus, Annals, Book I.; Pliny, Select Letters (Pritchard and Bernard; Clarendon Press Series). Greek and Latin Prose Composition.

History.—*Text-Books.*—Rawlinson's Manual of Ancient History; Smith's Student's Greece; Liddell's Rome.

English Language and Literature.—Spalding's English Literature (Chap. VI., Part III., to end of book); Shakspere, Tempest; Milton's Paradise Lost, Books I. and II.; Trench, Study of Words.

English Composition.—High marks will be given for this subject.

French.—Racine, Britannicus; Molière, les Femmes savantes. French Grammar. Bonnefon, Les Ecrivains célèbres de la France. Translation from English into French.

Classical Subjects for Exhibitions, September, 1891.

FIRST YEAR.—*Greek.*—Homer, Iliad, Bk. IV.; Xenophon, Anabasis, Bk. I.; Demosthenes, Philippics I. and II.

Latin.—Virgil, Æn., Bk. I.; Cicero, In Catilinam, Orat. I.; Caesar, Bell. Gall. Bks. I. and II.

SECOND YEAR.—*Greek.*—Homer, Odyssey, Bk. VII.; Demosthenes, Olynthiacs, I. and II.; Herodotus, Bk. III., chaps. 1–67.

Latin.—Virgil, Georgics, Bk. I.; Horace, Odes, Bk. I.; Livy, Bk. XXIII.

German for Scholarships, September, 1891.
(As an alternative for French.)

Grammar and Composition. Immermann, Der Oberhof. Schiller, Die Jungfrau von Orleans.

EXEMPTIONS FROM FEES UNDER PRESENTATION SCHOLARSHIPS, &c.

A number of these are in the gift of Benefactors, and entitle the Students holding them to exemption from the Sessional Fees in the Faculty of Arts. Sixteen have been placed by the Governors at the disposal of His Excellency the Governor General. Candidates must pass the usual Matriculation Examination.

[By command of His Excellency, four of these Exemptions will be offered for competition in the First Year Exhibition Examinations of the ensuing session.]

Eight exemptions from fees may be granted by the Board of Governors, from time to time, to the most successful Students who may present themselves as Candidates. By order of the Board one of these is given annually to the Dux of the High School of Montreal, and one to the Dux of any other Academy or High School sending up in one year for entrance, three or more Candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among its pupils an Annual Bursary in the Faculty of Arts of not less than $80, the Governors will add the amount of the fees of tuition hereto.

Exemptions from fees, not exceeding three in number, may be given to holders of the Academy Diploma of the McGill Normal School, who, on fulfilling the required conditions, enter in the Second Year, if at the Diploma Examination they have taken 75 per cent. of the total marks, with not less than two-thirds of the marks in Latin and in Greek.

By a resolution of the Board of Governors exemptions are granted to students of any affiliated Theological College, recommended by its Principal, and entering the Faculty of Arts either as Undergraduates or as Partial Students.

One exemption is given annually to the pupil (boy or girl) of the Montreal High School holding a Commissioner's exemption from the Schools of the Protestant Commissioners, Montreal, who has taken the highest marks at the A. A. Examination, and is recommended by the Commissioners.

§ III. COURSE OF STUDY.

An Undergraduate, in order to attain the Degree of B.A., is required, after passing the First Year Matriculation Examination (see § I), to attend the appointed courses of lectures regularly for four years, and to pass two Examinations in each year, viz., at Christmas and in April. If he fail at any one of these examinations he is not allowed to proceed with his course until he has passed it subsequently. (See § IV). Undergraduates are arranged, according to their standing, as of the First, Second, Third or Fourth Year.

The special arrangements made for Honour Students and for those attending lectures in other Faculties also are stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

FIRST YEAR.

GREEK.—HOMER.—Iliad, Book XXII. Xenophon.—Cyropaedeia, Book I. Studies in History and Literature.

LATIN.—CICERO.—Select Orations. VIRGIL.—Georgics, Book I.—Translation at sight.—Studies in History and Literature.—Latin Prose Composition.

MATHEMATICS.—Arithmetic. Euclid, six books. Algebra to end of Quadratic equations. Plane Trigonometry, in part.

ENGLISH LANGUAGE AND LITERATURE.

First term.—MILTON'S Comus and BACON'S Essays (selected). Two lectures a week. English Composition, one lecture a week.

Second term.—English Literature, previous to Elizabethan Period.

CHEMISTRY.—Lectures, chiefly on Elementary and Inorganic Chemistry, with Experiments in the Class-Room, and Laboratory work if desired; the whole preparatory to the course in Natural Science.

FRENCH.—DAREY, Principes de Grammaire française.—LAFONTAINE, Choix de Fables.—MOLIERE, L'Avare—Dictation; Colloquial exercises.

Or either of the following:—

GERMAN.—VANDERSMISSEN'S AND FRASER'S German Grammar. Adler's Progressive German Reader (selections from Sections 1 and 2). Translations, oral and written. Dictation. Colloquial exercises.

HEBREW.—(For Theological Students). *Elementary Course.*—Reading and Grammar with oral and written exercises in Orthography and Etymology.—Translation and Grammatical Analysis of Genesis.—Text-books, HARPER'S Elements of Hebrew; and Introductory Hebrew Method and Manual.

SECOND YEAR.

GREEK.—PLATO.—Apology. Xenophon.—Memorabilia, Bk. I., Chaps. I.-IV.

LATIN.—HORACE.—Satires, Bk. I., 1 and 6; Bk. II., 6 SALLUST.—Jugurthine War. Translation at sight and Latin Prose Composition.

MATHEMATICS.—Arithmetic, Euclid, Algebra and Trigonometry as before.—Logarithms.—Plane Trigonometry, including solution of triangle and applications.

ENGLISH LITERATURE.—A period of English Literature and one play of Shakspere. During the Session of 1890-91—The leading poets of the nineteenth century. SHAKSPERE, A Midsummer Night's Dream. [Clarendon Press Edition.]

PSYCHOLOGY AND LOGIC.—First Term.—Elementary Psychology (Text Book :—MURRAY'S Handbook of Psychology, Book I). Second Term.—Logic (Text-book :—JEVONS' Elementary Lessons in Logic).

BOTANY.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology. *Text-Books.*—Gray and Bessey.

FRENCH.—Ponsard, l'Honneur et l'Argent. RACINE, Britannicus.—CONTANSEAU, Précis de litterature française depuis son origine jusqu'à la fin du XVIIIe siècle. Translation into French :—DR. JOHNSON, Rasselas. Dictation. Parsing. Colloquial exercises.

Or either of the following :—

GERMAN.—VANDERSMISSEN'S AND FRASER'S German Grammar. ADLER'S Progressive German Reader (selections from Sections 3-5). TOWNSON, Easy German Stories. Dictation. Colloquial exercises. Translations, oral and written. Parsing.

HEBREW.—(For Theological Students.)—*Intermediate Course.*—Grammar.—Dr. Harper's "Elements and Methods."—Translation from Genesis Exodus, Deuteronomy.—Exercises :—Hebrew into English, and English into Hebrew.—Syntax.—Reading of the Masoretic notes.

For the Intermediate Examination see § IV.

THIRD YEAR.

GREEK.—LYSIAS.—Contra Eratosthenem.
ÆSCHYLUS.—Prometheus Vinctus.

Or, instead of Greek :—

LATIN.—JUVENAL.—Satires VIII. and XIII.
LIVY.—Book XXI.
Latin Prose Composition.

NATURAL PHILOSOPHY.—MATHEMATICAL PHYSICS.—GALBRAITH AND HAUGHTON'S Mechanics, viz., *Statics*, First 3 chapters, omitting sec. 5, chapter I., and sec. 21, chapter II. ; *Dynamics*, subjects of the First 5 chapters. GALBRAITH AND HAUGHTON'S Hydrostatics.

In addition to the above, the Student must take three subjects out of the two following divisions, headed Literature and Science respectively, the selection being at the option of the student, provided two be taken from one division and one from the other.

I. Literature, &c.

LATIN OR GREEK.—As above, according as Greek or Latin has been chosen previously.

ENGLISH AND RHETORIC.—*A.* CHAUCER'S Prologue to Canterbury Tales, ed. Morris, *B.* BAIN'S Rhetoric.

MENTAL PHILOSOPHY.—First Term :—The Logic of Induction, as in MILL'S System of Logic, Book III. Second Term :—The Psychology of Cognition, as in MURRAY'S Handbook of Pyschology, Book II., Part I.

FRENCH.—(If taken in the first two years).—CORNEILLE, Polyeucte.—Cogery —Third French course. Translation into French :—Johnson, Rasselas. French Composition. Dictation.—CONTANSEAU, Précis de littérature française, depuis le XVIIIe siècle jusqu'à nos jours.

GERMAN.—(If taken in the first two years.) VANDERSMISSEN'S AND FRASER'S German Grammar. SCHILLER, Siege of Antwerp. LESSING, Minna von Barnhelm. History of German Literature from the earliest periods to the close of the 18th century (a brief survey). German composition. Dictation.

HEBREW.—(For Theological Students).—*Advanced Course.*—Gesenius' Grammar —Harper's Elements of Syntax. Exercises continued.—Translation. Reading of the Masoretic notes.—Isaiah ; Psalms ; Job ; Ecclesiastes ; Jeremiah.

II. Science.

† OPTICS AND DESCRIPTIVE ASTRONOMY.—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy, English edition ; first three chapters. Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

† EXPERIMENTAL PHYSICS.—Electricity, Magnetism, and Sound ; or, Light and Heat ; as in Ganot's Treatise.

ZOOLOGY AND PALÆONTOLOGY.—Elements of Animal Physiology, Classification of Animals. Characters of the Classes and Orders of Animals, with Recent and Fossil Examples, taken as far as possible from Canadian Species. Demonstrations in the Museum. *Text-book.*—Dawson's Hand-book of Zoology.

FOURTH YEAR.

GREEK.—ÆSCHINES.—Contra Ctesiphontem.

Or, instead of Greek :—

LATIN.—TACITUS.—Annals, Book I.
Latin Prose Composition.

NATURAL PHILOSOPHY.—*Mathematical Physics.* Mechanics and Hydrostatics (as in Third Year), or Astronomy (GALBRAITH AND HAUGHTON) and Optics (GALBRAITH AND HAUGHTON).

MORAL PHILOSOPHY.—First Term.—The Psychological Basis of Ethics. Second Term.—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. The Students are required to write occasional essays on Philosophical subjects.

In addition to the preceding, the Student must take three subjects out of the two following divisions (headed Literature and Science respectively), the selection being at the option of the Student, provided all three are not taken out of the same division.

I. Literature, etc.

LATIN OR GREEK.—As above, according as Greek or Latin has been taken above.

HISTORY.—Lectures on the History of Europe from the downfall of the Roman Empire of the West to the Reformation. Text books: MYERS, Mediæval and Modern History, pp. 1–398. BRYCE, Holy Roman Empire (omit chaps. 6, 8, 9, 13, and supplementary chapter).

FRENCH.—(If taken in Third Year) BONNEFON, Les Ecrivains modernes de la France.—Translation into French.—Morley's Ideal Commonwealths. Dictation.—CORNEILLE, Polyeucte.

GERMAN.—(If taken in Third Year)—German Grammar and Composition. Dictation. FOUQUE, Undine; SCHILLER, Wallenstein.
Outlines of German Literature. GOSTWICK & HARRISON (Chapters 15–24).

HEBREW.—(For Theological Students.) Advanced Course continued—Job; Proverbs.

II. Science.

†ASTRONOMY AND OPTICS.—If not chosen as above.

†EXPERIMENTAL PHYSICS.—Light and Heat; or Electricity, Magnetism and Sound:— as in GANOT'S Treatise.

MINERALOGY AND GEOLOGY.—1. *Mineralogy and Petrography.* Minerals and rocks, especially those important in Geology or useful in the Arts. 2. *Stratigraphy, Chronological Geology and Palæontology.*—Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America. *Text-book.*—Dawson's Handbook of Canadian Geology.

For the B. A. Examinations see § IV.

† Students claiming exemptions (see § V.), cannot count these subjects for the B.A. if they have not taken the Third Year Mathematical Physics.

Notes on the Ordinary Course for B.A.

Instead of two distinct subjects in one of the above divisions in either Third or Fourth Year, the Student may select one subject only, together with an *Additional Course* in the same or any other of his subjects in which such Additional Course may have been provided by the Faculty, under the above rules, provided he has been placed in the first class in the corresponding subject at the preceding Sessional Examination (viz., Intermediate or Third Year, according to standing).

The Additional course is intended to be more than equivalent, in the amount of work involved, for any of the other subjects in the division.

(For details of additional courses provided see under Section XII.)

Undergraduates are required to study either French or German for two years (viz., in the First and Second Years), taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the Language in which he has failed. In addition to the obligatory, there are other lectures, attendance on which is optional.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

Undergraduates who have been previously Partial or Occasional Students, and have in that capacity attended a particular Course or Courses of Lectures, may, at the discretion of the Faculty, be exempted from further attendance on these Lectures, but no distinction shall in consequence be made between the Examination of such Undergraduates and of those regularly attending Lectures.

HONOUR COURSES.

2. At the examination for the degree of B.A., Honours are given in the following subjects, for which special Honour Courses are provided :—[For details see under § XII.]

1. Classical Languages and Literature.
2. Mathematics and Physics.
3. Mental and Moral Philosophy.
4. English Language, Literature and History.
5. Geology and other Natural Sciences.
6. Modern Languages with History.
7. Semitic Languages.

Honours are given in the above subjects in the Third Year also, and in Mathematics in the First and Second Years.

Candidates for Honours are allowed exemptions under conditions stated in § V.

§ IV. EXAMINATIONS.

COLLEGE EXAMINATIONS.

For Students of McGill College only.

1. There are two Examinations in each year; one at Christmas and the other at end of the Session. In each of those the students who pass are arranged according to their answering as 1st Class, 2nd Class, and 3rd Class.

In the Fourth Year only, the University Examination for B.A. takes the place of the Sessional Examination.

2. Students who fail in any subject at the Christmas Examinations are required to pass a Supplemental Examination (if permission be obtained from the Faculty) on that subject, before admission to the Sessional Examinations.

3. Undergraduates who fail in one subject at the Sessional Examinations of the first two years are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending ectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations of the first two years, or in one subject at the third year Sessional Examinations, involves the loss of the Session. The Faculty may permit the Student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. Application for a Supplemental Examination must in all cases be made to the Faculty. A Partial or Occasional Student is required to pay a fee of $1 for it, if granted. The time for the Supplemental Examination will be fixed by the Faculty; the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

UNIVERSITY EXAMINATIONS.

For Students of McGill College and of Colleges affiliated in Arts.

I. FOR THE DEGREE OF B.A.

There are three University Examinations:—The *Matriculation* at entrance, the *Intermediate*, at the end of the Second Year; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section 1.

2. In the Intermediate Examination the subjects are Classics and Pure Mathematics, Logic, and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern Language. The subjects for the examination of 1891 are as follows:—

Classics.—Greek.—Plato.—Apology.—Xenophon.—Memorabilia, Book I., Chaps. I. to IV. Latin—Horace.—Satires, Bk. I., 1 and 6. Bk. II., 6. Sallust, Jugurthine War.
Latin Prose Composition.

Mathematics.—Arithmetic.
Euclid, Books I., II., III., IV., VI., and defs. of Book V.
Algebra, to Quadratic Equations, inclusive.
Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic.

English.—Spalding's History of English Literature or Lectures (see course). A paper on the essentials of English History (Buckley). Essay on a subject to be given at the time of the Examination.
With one of the following:—

1. *Botany and Vegetable Physiology.*—Structural and Systematic Botany, as in Gray's Text-Book, omitting the Descriptions of the Orders.
2. *French.*—Ponsard:—l'Honneur et l'Argent. Racine.—Britannicus—Contanseau.—Précis de la Littérature française, from the beginning to the end of the XVIIIth century. Translation into French:—Rasselas. Grammatical questions.
3. *German.*—Schmidt's German Guide; Adler's Reader (selections from secs. 3 and 4); Translation into German.
4. *Hebrew.*—Genesis.—chaps. III., IV., V., VI.; Exodus.—chap. XX. Judges.—chap. V. Exercises: Hebrew into English, and English into Hebrew. Syntax. Reading of the Masoretic notes.

3. For the Final or B.A. Ordinary Examination the subjects are those appointed as obligatory in the Third and Fourth Years, viz.,

Latin or Greek ; Mathematical Physics (Mechanics and Hydrostatics) or Astronomy and Optics ; Moral Philosophy ; and those three subjects which the Candidate may have selected for himself in the Third and Fourth Years. (See § III.)

The subjects in detail for 1891 are as follows :—

1. *Greek.*—Æschines, Contra Ctesiphontem ; Æschylus, Prometheus Vinctus. *Greek History:*—From the close of the Peloponnesian war to the death of Philip. (Or Latin, as follows) :—
2. *Latin.*—Tacitus, Annals, Book I.; Juvenal, Satt. VIII. and XIII. *Roman History.* The twelve Cæsars.

Mathematical Physics.

1. Mechanics and Hydrostatics, as in Galbraith & Haughton's text-books; or
2. Optics and Astronomy, " " "

Mental and Moral Philosophy.

Calderwood's Handbook of Moral Philosophy (omitting the Historical Sketch,) and Rogers' Manual of Political Economy.

*Lectures, with any two of the books prescribed for Part I. of the Honour work of the Fourth Year.

Natural Science.

Mineralogy and Geology, as in Dana's Manual and Dawson's Handbook of Canadian Geology.

*Practical Geology and Palæontology ; or Practical Chemistry, as in § XII.

Experimental Physics.

Electricity, Magnetism and Sound (see Courses of Lectures, § XII.)

History.

Myers:—Mediæval and Modern History; Bryce's Holy Roman Empire (omit Chaps. 6, 8, 9, 13, and supplementary Chapter).

*Additional Course as in § XII.

French.

The Course of French for the Fourth Year.

*The subjects of the Additional Course as in § XII.

German.

The Course of German for Fourth Year.

*Additional Course as in § XII.

Hebrew (Theological Students).

Job I., II., III., IV. Proverbs I., II., III., IV. Psalms XI. to XV.

Gesenius' Grammar, Harper's Elements of Syntax, Reading of the Masoretic notes.

*Additional Courses (see § XII.)

For details of each subject, see Courses of Lectures, § XII.

At the B.A. Ordinary Examination of those Candidates who obtain the required aggregate of marks only those who pass in the First Class in three of the departments, and not less than Second Class in the remainder, shall be entitled to be placed in the First Class for the Ordinary Degree.

4. Every Candidate for the Degree of B.A. is required to make and sign the following declaration :—

"Ego———polliceor sancteque recipio me, pro meis viribus, studiosum fore communis hujus Universitatis boni, et operam daturum ut ejus decus et dignitatem promoveam."

II. FOR THE DEGREE OF M.A.

1. A Candidate must be a Bachelor of Arts of at least three years standing.

Thesis.

2. He is required to prepare and submit to the Faculty a thesis on some literary or scientific subject, under the following rules :—

a. The subject of the thesis must be submitted to the Faculty before the thesis is presented.

b. A paper read previously to any association or published in any way cannot be accepted as a thesis.

c. The thesis becomes the property of the University, and can not be published without the consent of the Faculty of Arts.

d. The thesis must be submitted before some date to be fixed annually by the Faculty, not less than two months before proceeding to the Degree.

The last day in the session of 1890-91 *for sending in Thesis for M.A. will be Jan.* 31*st*, 1891.

Examination.

3. All Candidates, except those who have taken First Rank B.A. Honours (or Second Rank B.A. Honours in or after 1889), or have passed First Class in the Ordinary Examinations for the Degree of B.A., are required to pass an examination also, either in Literature or in Science, as each Candidate may select.

(*a*) The subjects of the Examination in *Literature* are divided into two groups as follows :—

Group A.—1. Latin. 2 Greek. 3. Hebrew.

Group B.—1. French. 2. German. 3. English.

(*b*) The subjects for the Examination in *Science* are divided into three groups :—

Group A.—1. Pure Mathematics (Advanced or Ordinary). 2. Mechanics (including Hydrostatics). 3. Astronomy. 4. Optics.

Group B.—1. Geology and Mineralogy. 2. Botany. 3. Zoology. 4. Chemistry.

Group C.—1. Mental Philosophy. 2. Moral Philosophy. 3. Logic. 4 History of Philosophy.

(*c*) Every Candidate in Literature is required to select two subjects out of one group in the Literary section, and one out of the other group in the same section for the Examination. Every Candidate in Science is required to select two out of the three groups in the Scientific section; and in one of the groups so chosen to select two subjects, and in the other group one subject for Examination.

(*d*) One of the subjects selected as above will be considered the principal subject (being so denoted by the Candidate at the time of application), and the other two as subordinate subjects.

For further details of the Examination application must be made to the Faculty before the above date. For fees see § XI.

III. FOR THE DEGREE OF LL.D.

Candidates must be Masters of Arts of at least twelve years standing. Every Candidate for the Degree of LL.D. in course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a Thesis on some Literary or Scientific *subject previously approved* by the Faculty, and possessing such a degree of Literary or Scientific merit, and evidencing such originality of thought or extent of research as shall, in the opinion of the Faculty, justify it in recommending him for that degree.

N.B.—The subject should be submitted before the Thesis is written.

Every Candidate for the degree of LL.D. in Course is required to submit to the Faculty of Arts, with his Thesis, a list of books, treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and on which he shall be examined, unless otherwise ordered by vote of the Faculty. For fees see § XI.

§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

The Honour lectures are open to Undergraduates only, and no Undergraduate is permitted to attend unless (*a*) He has been placed in the First Class in the subject at the preceding Sessional Examination, if there be one, and has (*b*) satisfied the Professor that he is otherwise qualified.

(*c*) While attending lectures his progress must be satisfactory to the Professor. If not satisfactory, he may be notified by the Faculty to discontinue attendance.

I. Candidates for Honours in the Second Year.

Candidates for Honours in the Second Year who have obtained Honours in the First Year may omit the lectures and examinations either in Modern Languages (or Hebrew) or Botany, giving notice of the subject at the beginning of the session.

II. Candidates for Honours in the Third Year.

Every Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Examinations of the Second Year have taken First Rank Honours, if Honours be offered in the subject, or, if not, First Class at the Ordinary Sessional Examinations in the subject in which he proposes to compete for Honours, and be higher than Third Class in the majority of the remaining subjects; such Candidates shall be entitled in the Third Year to exemption from lectures and examinations in any one of the subjects required by the general rule (see § III), except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary Undergraduates.

III. Candidates for B.A. Honours.

A Student who has taken Honours of the first rank in the Third Year, and desires to be a Candidate for B. A. Honours, shall be required to attend two only of the courses of lectures given in the ordinary departments, and to pass the two corresponding examinations only at the ordinary B.A. Examination. Candidates, however, who at the B.A. Examinations obtain Third Rank Honours, will not be allowed credit for these exemptions at the end of the Session, unless the Examiners

certify that the knowledge shown of the whole Honour Course (Part II. as well as Part I.) is sufficient to justify it. A Student who has taken Second Rank Honours in the Third Year, and desires to be a Candidate for B A. Honours in the same subject, shall be allowed to continue in the Fourth Year the study of the same departments that he has taken in the Third Year, but shall be required to take the same number of subjects as in the Ordinary Course.

NOTE.—For subjects of Ordinary Course see § III.

IV. Professional Students.

Students of the Third and Fourth Years, matriculated in the Faculties of Law, Medicine, or Applied Science of the University, or in any affiliated Theological College, are entitled to exemption from any one of the Ordinary subjects required in the Third and Fourth Years. (For rule concerning "Special Certificates" see § VI.)

To be allowed these privileges in either year they must give notice at the commencement of the Session to the Dean of the Faculty of their intention to claim exemptions as Professional Students, and must produce at the end of the Session certificates of attendance on a full course of Professional Lectures during the year for which the exemption is claimed.

V. Students of the University attending Affiliated Theological Colleges.

1. Such Students, whether entered as Matriculated or Occasional, are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College which any such Students may attend, as to :—(1) their conduct and attendance on the classes of the Faculty; and (2) their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Undergraduates are allowed no exemptions in the course for the degree of B.A. until they have passed the Intermediate Examination; but they may take Hebrew in the First or Second Years, instead of French or German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

* Any Student who, under any of the above rules, desires to take Experimental Physics, is required to take Mechanics and Hydrostatics also, in the Third Year.

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§ VI. MEDALS, HONOURS, PRIZES, AND CLASSING.

1. Gold Medals will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subjects stated below, and who shall have passed creditably the

Ordinary Examinations for the Degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty on the report of the Examiners:

The *Henry Chapman Gold Medal*, for the Classical Languages and Literature.
The *Prince of Wales Gold Medal*, for Mental and Moral Philosophy.
The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.
The *Shakespeare Gold Medal*, for the English Language, Literature and History.
The *Logan Gold Medal*, for Geology and other Natural Sciences.
Major Hiram Mills Gold Medal, for a subject to be chosen by the Faculty from year to year.

If there be no Candidate for any Medal, or if none of the Candidates fulfils the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes on the subject for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS of First, Second or Third Rank will be awarded to those Undergraduates who have successfully passed the Examinations in any Honour Course established by the Faculty, and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

The Honour Examinations are each divided into two parts, separated by an interval of a few days, under the following regulations:—

a. No Candidate will be admitted to Part II. unless he has shown a thorough and accurate knowledge of the course appointed for Part I.

b. The names of the successful Candidates in Part I. will be announced before Part II. begins.

c. First or Second Rank Honours will be awarded to those Candidates only who are successful in Part II.

d. Third Rank Honours will be awarded to those who are successful in Part I. alone.

By an Order of the Lieutenant-Governor of Ontario in Council, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province, as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for First Class Certificates for Grades "A. and B."

3. Special Certificates will be given to those Candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination. The Candidates must have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, be in the First Class in not less than half the subjects, and have no Third Class. At this examination no Candidate who has taken exemptions (see § V.) can be placed in the First Class, unless he has obtained First Class in each of the departments in which he has been examined.

4. Certificates of High General Standing will be granted to those Undergraduates of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the Studies proper to their year, are in the First Class in not less than half the subjects, and have not more than one Third Class. In the Third Year the conditions are the same as for the Special Certificate for B.A.

5. Prizes or Certificates to those Undergraduates who may have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

6. His Excellency Lord Stanley has been pleased to offer a Gold Medal for the study of Modern Languages and Literature, with History, or for First Rank General Standing, as may be announced.

(*a*) The Regulations for the former are as follows:—

(1) The subjects for competition shall be French and German, together with the History part of the present Honour Course for the Shakespeare Medal.

(2) The course of study shall extend over two years, viz., the Third and Fourth Years.

(3) The successful Candidate must be capable of speaking and writing both languages correctly.

(4) There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

(5) The general conditions of competition, and the privileges as regards exemptions, shall be the same as for the other Gold Medals in the Faculty of Arts.

(6) Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

(7) Candidates desiring to enter on the Third Year of the Course, who have not obtained First Class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the course in Modern Languages, if called on to do so by the Professors.

(8) The subjects of Examination shall be those of the Honour Course in Modern Languages.

(*b*) The Regulations for the Gold Medal, if awarded for First Rank General Standing, are as follows:—

(1). The successful Candidate must take no exemptions or substitutions of any kind, whether Professional or Honour, in the Ordinary B. A. Examinations.

(2). He shall be examined in the following subjects:—

(*a*) *Classics* (both languages); (*b*) *Mixed Mathematics*:—*Mechanics*, *Hydrostatics*, *Optics*, *Astronomy*; (*c*) *Moral Philosophy*; and any *two* of the following subjects, or any *one* of them with its Additional Course; (*d*) Natural Science; (*e*) Experimental Physics; (*f*) English and History; (*g*) French; (*h*) German.

(3). His answering must satisfy special conditions laid down by the Faculty.

(4). The same Candidate cannot obtain the Gold Medal for First Rank General Standing, and also a Gold Medal for first Rank Honours.

7. The Neil Stewart Prize of $20 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University, under the following rules:—

(1). The prize will not be given for less than a thorough examination in Hebrew Grammar passed in the First Class, in reading and translating the Pentateuch, and such poetic portions of the Scriptures as may be determined.

(2). In case competitors should fail to attain the above standard the prize will be withheld, and a prize of Forty Dollars will be offered in the following year for the same.

[Course for the present year:—Hebrew Grammar (Gesenius); Translation and analysis of Ruth; Ecclesiastes; Malachi.

(3). There will be two Examinations of three hours each; one in Grammar and the other in Translation and Analysis.

The Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill, and will be offered for competition next session.

8 Early English Text Society's Prize.—The prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be:—

(1). The Lectures of the Third and Fourth Years on Anglo-Saxon.

(2). Specimens of Early English, Clarendon Press Series, ed. Morris and Skeat, Part II., A.D. 1298—A.D. 1393. The Lay of Havelok the Dane (Early English Text Society, ed. Skeat).

9. NEW SHAKSPERE SOCIETY'S PRIZE. This Prize, the annual gift of the New Shakspere Society, open to Graduates and Undergraduates, will be awarded for a critical knowledge of the following plays of Shakspere:—

Hamlet; Macbeth; Othello; King Lear.

10. "CHARLES G. COSTER MEMORIAL PRIZE." This Prize, intended as a tribute to the memory of the late Rev. Charles G. Coster, M.A., Ph.D., Principal of the Grammar School, St. John, N.B., is offered by Colin H. Livingstone, Esq., B.A., to the Undergraduates (men or women) from the Maritime Provinces, Nova Scotia, New Brunswick and Prince Edward Island. In April, 1891, it will be awarded to that Undergraduate of the First or Second or Third Year, from the above Provinces, who in the opinion of the Faculty has passed the most satisfactory Sessional Examinations.

11. The names of those who have taken Honours, Certificates or Prizes will be published in order of merit; with mention, in the case of Students of the First and Second Years, of the schools in which their preliminary education has been received.

VII. LICENSED BOARDING HOUSES.

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding-houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a license to keep boarding-houses shall produce evidence satisfactory to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the Students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immorality or disorderly conduct.

§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct:—

1. A Class book shall be kept by each Professor or Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of the lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the class-room. In the case last mentioned the Student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any of the above offences against discipline, after admonition by the Professor, shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class rooms. Any Professor observing improper conduct in the College buildings or grounds may admonish the Student, and, if necessary, report him to the Dean.

5. Every Student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain, without as well as within the walls of the College, a good moral character.

6. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes or honours, suspend from Classes, or report to the Corporation for expulsion.

7. Any Student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar.

8. Any Student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

9. All cases of discipline involving the interest of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

[NOTE.—All Students are required to appear in Academic dress while in or about the College building. Students are requested to take notice that petitions to the Faculty on any subject cannot, in general, be taken into consideration, except at the regular meetings, appointed in the Calendar.]

§ IX. LIBRARY.

Extract from the Regulations.

1. The books in the Library are classed in two divisions :—1st, Those which may be lent ; and 2nd, those which may not, under any circumstances, be removed from the Library. The classification shall be determined by the Librarian.

2. Students in the Faculty of Arts or of Applied Science, who have paid the Library fee, may borrow books on depositing the sum of $5 with the Bursar, which deposit after the deduction of any fines due, will be repaid at the end of the Session on the certificate of the Librarian or his assistant that the books have been returned uninjured.

3. Students may borrow not more than three volumes at one time, except on the recommendation in writing of a Professor for specified books, and must return them within two weeks, on penalty of a fine of 5 cents a volume for each day of detention. An additional deposit of $4 entitles a Student to borrow two extra volumes.

4. A Student incurring fines beyond the sum-total of $1 shall be debarred the use of the Library until they have been paid.

5. Any volume, or volumes, lost or damaged by any person, shall be replaced or paid for at such rates as the Library Committee may direct ; and such rate of payment shall be determined by the value of the book itself, or of the set to which the volume belongs.

6 Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as Students ; but they are not required to pay the annual Library fee.

7. Graduates residing beyond the City limits, and applying for the loan of books from the Library, shall not receive such books without the sanction of the Honorary Librarian, and depositing the value of the books with the Bursar of the College.

8. Members of the McGill College Book Club, on presenting annually a certificate of their membership, are by a special regulation of Corporation entitled to the use of the Library on the same conditions as Graduates, but they are not required to make a deposit.

9. Students in the Faculties of Law and Medicine, who have paid the Library fee to the Bursar, may read in the Library, and, on depositing the sum of $5 with the Bursar, may borrow books on the same conditions as Students in Arts. They are required to present their Matriculation Tickets to the Bursar and to the Librarian or his assistant.

10. Persons not connected with the College may consult books in the Library on obtaining an order from any of the Governors, or from the Principal, or the Dean of the Faculty of Arts or of Applied Science, or from any of the Professors in the said Faculties. Donors of books or money to the amount of Fifty dollars may at any time consult books on application to the Librarian.

11. The Library is kept open from 9 a.m. to 4 p.m. daily, and no person shall be allowed in the Library exce t during these hours.

12 No person, other than the Librarian and the assistants, is allowed to enter the alcoves, or to take down books from the shelves, except members of Corporation, and Professors, or those whom any of the above may accompany personally.

13. A person desiring to read or to borrow a book, which he has ascertained from the Catalogue to be in the Library, will fill up one of the blank forms provided for Readers and Borrowers respectively, and hand it to the Library Assistant, who will thereupon procure him the book.

14. Readers must return the books they have obtained to the Library Assistant before leaving the Library.

15. No conversation is permitted in the Library.

§ X. PETER REDPATH MUSEUM

1. The Museum will be open every lawful day from 9 a.m. till 5 p.m., except when closed for any special reason by order of the Principal or Committee.

2. Students will obtain tickets of admission from the Principal on application.

3. Students will enter by the front door only, except when going to lectures.

4. Any Students wilfully defacing or injuring specimens, or removing the same, will be excluded from access to the Museum for the Session.

§ XI. FEES.

All fees and fines are payable to the Bursar of the College.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only)	$ 4.00
For the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year and re-enter in the Second Year on Examination.)	6.00
Sessional Fee	20.00
Library Fee	4.00
Gymnasium Fee	2.50

Undergraduates are required to pay all the above fees.

SPECIAL FEES.

Fee for a certificate of standing if granted to a Student on application	$ 1 00
Fee for a certificate of standing, if accompanied by a statement of classification in the several subjects of examination	2 00

Examination Fee for Students of Affiliated Theological Colleges who present themselves for the entrance examination without intending to become Undergraduates..... 10 00

Supplemental Examination, for Partial or Occasional Students, if granted. 1 00

Supplemental Examination, when granted at any other time than that fixed by the Faculty..... 5 00

Additional Botany Fee..... 10 00

Matriculation Certificate, for Students intending to enter the Medical Faculty..... 2 50

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation, Library and Gymnasium Fees, and $5 for each Course which they attend, or $20 for all the courses.

Occasional Students taking one course of Lectures only are required to pay $5 per Session for that course.

Occasional Students taking two courses of Lectures are required to pay the Library Fee and $5 for each course.

N.B.—The lectures in one subject in any one of the four College Years constitute a "Course."

The Matriculation, Library and Gymnasium Fees are exigible from Students holding exemptions from Sessional Fees.

Graduates in Arts are allowed to attend, without payment of fees, all lectures except those noted as requiring a special fee.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

[All fines are applied to the purchase of books for the Library.]

Fee for the Degree of B.A......	$ 5 00
" " " *M.A*.....	10 00*
" " " *LL.D*.....	50 00*

If the Degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is .....$25.00.

The B.A. fee must be paid before the Examination.

The M.A. or LL.D. fee must be sent with the Thesis to the Secretary of the University. This is a condition essential to the reception of the application. The Secretary will then forward the Thesis to the Dean of the Faculty.

* A Bachelor of Arts or Master of Arts, intending to proceed to a higher Degree, is required, *in addition* to the above, to keep his name on the books of the University, by the annual payment of a fee of $2 to the Registrar of the University. He may, if he prefer it, compound for the above annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the date of application for the Degree.

Extract from the Regulations of the Board of Governors for Election of Fellows under Chap. V. of the Statutes of the University :

"From and after the graduation of 1888 all new Graduates shall "pay a Registration Fee of $2.50 at the time of their graduation, "and in addition to the Graduation Fee; and shall be entered in "the University list as privileged to vote, and shall have voting "papers mailed to them by the Secretary."

§ XII. COURSES OF LECTURES.

I. ORDINARY COURSE.

I. CLASSICAL LITERATURE AND HISTORY.

(Major H. Mills Professorship of Classics.)
Professor, Rev. G. Cornish, M.A., LL.D.
Asst. Prof., A. J. Eaton, M.A., Ph. D.

GREEK.

First Year.—Homer.—Iliad, Book XXII. Xenophon.—Cyropaedeia, Book I.
Second Year.—Plato.—Apology. Xenophon.—Memorabilia, Bk. I., Chaps. I-IV.
Third Year.—Lysias.—Contra Eratosthenem. Æschylus.—Prometheus Vinctus.
Fourth Year.—Æschines.—Contra Ctesiphontem.

LATIN.

First Year.—Cicero.—Select Orations. Virgil.—Georgics, Bk. I. Latin Prose Composition.
Second Year.—Horace.—Satire, Bk. I, 1 and 6; Bk. II., 6. Sallust.—Jugurthine War. Latin Prose Composition.
Third Year.—Juvenal.—Satires VIII. and XIII. Livy.—Book XXI. Latin Prose Composition.
Fourth Year.—Tacitus.—Annals, Book I. Latin Prose Composition.

In the work of the Class the attention of the Student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages, and to Prosody and Accentuation.

An examination in Greek and Roman History will be required at the close of the First Year.

The Latin pronunciation adopted in the lectures is based on the scheme issued by the Cambridge Philological Society (London: Trubner & Co).

In Greek, the system of pronunciation, outlined in the preface of Goodwin's Greek Grammar, is recommended to the attention of Students.

Number of lectures in Fourth Year—two weekly, or, at the discretion of the Professor, three.

2. ENGLISH LANGUAGE AND LITERATURE.

(Molson Professorship.)

Professor, Chas. E. Moyse, B.A.

Lecturer, Paul T. Lafleur, M.A.

First Year—English Language and Literature. Three lectures a week. Until Christmas the work of the class will partly consist of exercises in English Composition. Two lectures a week will be given to the study of English classics. Milton's Comus and a portion of Bacon's Essays have been selected for the Session of 1890-91. After Christmas there will be a course of about thirty lectures on English Literature previous to the Elizabethan Period. Students are recommended to use Prof. Henry Morley's Charts of English Literature, and to read the first chapter of Henry Morley's English Writers (Cassell, 1887).*

Second Year.—A period of English Literature, and one play of Shakespeare. One Lecture a week before Christmas; two Lectures a week after Christmas. During the Session of 1890-91, the leading poets of the Nineteenth Century will form the subject of the Lectures. Shakespeare—A Midsummer Night's Dream. (Clarendon Press Edition)

Third Year.—*A.* Chaucer's Prologue to Canterbury Tales. Lecture once a week; Text-book, Chaucer's Prologue, &c., ed. Morris. *B.* Rhetoric Lecture once a week; Text-book, Bain's Rhetoric.

Fourth Year.—History. The Lectures (once a week) will be a sketch of general European History from the fall of the Roman Empire of the West to the discovery of the New World. The use of Prof. Nicol's Tables of European History is recommended.

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3. MENTAL AND MORAL PHILOSOPHY.

(John Frothingham Professorship of Mental and Moral Philosophy.)

Professor, Rev. J. Clark Murray, LL.D.

Lecturer, Paul T. Lafleur, M.A.

Second Year.—First term.—Elementary Psychology. (Text-book;—Murray's Handbook of Psychology, Book I.) Second Term.—Logic. (Text-book:—Jevons' Elementary Lessons in Logic.)*

Third Year.—First Term:—The Logic of Induction, as in Mill's System of Logic, Book III. Second Term:—The Psychology of Cognition, as in Murray's Handbook of Psychology, Book II., Part I.

Fourth Year.—First Term.—The Psychological Basis of Ethics. Second Term.—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. In the Third and Fourth Year Students are also required to write occasional Essays on Philosophical subjects.

For Additional Courses see Honour Course.

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* The prizes are awarded on the work of the whole Session.

4. FRENCH LANGUAGE AND LITERATURE.

Professor, P. J. DAREY, M.A., B.C.L., LLD., Officier d'Académie.

First Year.—Darey.—Principes de Grammaire française. LaFontaine.—Choix de fables. Molière.—l'Avare. Dictation. Colloquial exercises.

Second Year.—Ponsard.—l'Honneur et l'Argent.—Racine. Britannicus. Contanseau.—Précis de littérature française, depuis son origine jusqu'à la fin du XVIIIe siècle. Translation into French:—Dr. Johnson.—Rasselas. Dictation. Parsing. Colloquial exercises.

Third Year.—Corneille.—Polyeucte. Cogery.—Third French course. Translation into French:—Johnson.—Rasselas. Dictation. Contanseau.—Précis de littérature française, depuis le XVIIIe siècle jusqu'à nos jours.

Fourth Year.—Cogery.—Third French course. Bonnefon.—Les Ecrivains modernes de la France. Translation into French:—Morley.—Ideal Commonwealths. French Composition. Dictation. Corneille,—Polyeucte.

For Additional Courses see Honour Lectures.

The Lectures in the Third and Fourth Years are given in French.

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5. GERMAN LANGUAGE AND LITERATURE.

Lecturer:—P. TOEWS, M.A.

First Year.—Vandersmissen's & Fraser's German Grammar. Adler's Progressive German Reader (selections from Sections 1 and 2). Translations, oral and written. Dictation. Colloquial exercises.

Second Year.—Vandersmissen's and Fraser's German Grammar. Adler's Progressive German Reader (selection from Sections 3-5). Townson, Easy German Stories. Parsing. Dictation. Colloquial exercises. Translations, oral and written.

Third Year.—Vandersmissen's and Fraser's German Grammar. Lessing, Minna von Barnhelm; Schiller, Siege of Antwerp. History of German Literature from the earliest periods to the close of the 18th century (a brief survey). German Composition. Dictation.

Fourth Year.—German Grammar and Composition. Fouqué, Undine; Schiller Wallenstein. Outlines of German Literature:—Gostwick and Harrison (Chapters 15-24).

For Additional courses see Honour Lectures.

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6. HEBREW AND ORIENTAL LITERATURE.

Professor, Rev. D. COUSSIRAT, B.A., B.D., Officier d'Académie.

Elementary Course.—Reading and Grammar with oral and written exercises in Orthography and Etymology.—Translation and Grammatical Analysis of Genesis.—Text-books:—Harper's Elements of Hebrew; and Introductory Hebrew Method and Manual.

Intermediate Course.—Grammar.—Dr. Harper's "Elements and Method."—Translation from Genesis, Exodus, Deuteronomy.—Exercises.—Hebrew into English, and English into Hebrew.—Syntax.—Reading of the Masoretic notes.

Advanced Course.—Gesenius' Grammar, and Harper's Elements of Syntax.—Exercises continued.—Translation. Reading of the Masoretic notes. *First Part :*—Isaiah ; Psalms. *Second Part :*—Job ; Ecclesiastes ; Proverbs.

The course comprises Lectures on the above Language and its Literature in particular, with a general notice of the other Oriental Languages, ito genius and peculiarities. Comparative Philo'ogy, affinity of Roots, &c., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

For Additional Courses see Honour Lectures.

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7. MATHEMATICS AND NATURAL PHILOSOPHY.

(Peter Redpath Professorship of Natural Philosophy).

Professor, Alexander Johnson, M.A., LL.D.

In the ordinary work of the First Year, assistance will be given by G. H. Chandler, M.A., Professor of Practical Mathematics in the Faculty of Applied Science.

First Year.—Mathematics.—Arithmetic.—Euclid, Books, 1, 2, 3, 4, 6, with definitions of Book 5 (omitting propositions 27, 28, 29 of Book 6) ; Todhunter's Edition—or Hall and Stevens' ; the latter is recommended to Candidates for Honours especially. Colenso's Algebra (Part I.) to end of Quadratic Equations.—Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles.

Second Year.—Mathematics.—Arithmetic, Euclid, Algebra, and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.

The course for the Intermediate University Examination consists of the Mathematics for the First two years.

Third Year.—Mathematical Physics.—Galbraith and Haughton's Mechanics, viz.: *Statics*, First 3 chapters, omitting sec. 5, chapter I., and sec. 21, chapter II. ; *Dynamics*, subjects of the First 5 chapters. Galbraith and Haughton's Hydrostatics.

Additional Department (open to those only who have studied the Mathematical Physics).—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy, English edition ; First three chapters, viz., The Stars and Nebulæ ; The Sun ; The Solar System). Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

Fourth Year.—Astronomy.—(*Optional*) Galbraith and Haughton's Astronomy.—The lectures on this subject will be given before Christmas.

Third and Fourth Years.—Experimental Physics.—*Light.*—Theories—Reflection — Refraction — Dispersion — Interference and Diffraction — Double Refraction — Polarization. 2—*Heat*—Dilatation of Solids, Liquids and Gases—Specific and Latent Heat—Radiation and Conduction—Mechanical Theory of Heat. 3—*Electricity*—Statical and Dynamical;—including Electro-Magnetism—Magneto-Electricity—Thermo-Electricity.—Diamagnetism—Electric Measurements—Practical Application to Telegraphy, &c. 4.—*Magnetism.* 5.—*Sound.*—Theory of Undulations—Production and Propagation of Sound—Vibration of Strings, Rods and Plates—Vibrations of Fluids—Musical Sounds. Text-book:—Ganot's Treatise, translated by Atkinson. This course extends over two years.

The subjects for the Session 1890-91 are Electricity, Magnetism and Sound.

The lectures in Mathematical and Experimental Physics will be illustrated by Apparatus, of which the College has a very good collection, including Dynamo and Gas Engine.

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8. GEOLOGY, MINERALOGY AND PETROGRAPHY

(Logan Professorship of Geology.)

Professor, Sir J. Wm. Dawson, C.M.G., LL.D., F.R.S., F.G.S.

B. J. Harrington, B.A., Ph.D., F.G.S., Professor of Mineralogy.

Frank D. Adams, M.A.Sc., Lecturer on Petrography and Physical Geology.

Fourth Year (1.)—Mineralogy and Petrography.—An elementary course, in which attention is given more particularly to such minerals and rocks as are important in Geology or useful in the Arts.

(2.) Physical Geology and Stratigraphy.—Denudation and Origin of Aqueous Deposits; Volcanoes and Earthquakes; Arrangement of Rocks on the large scale; Origin of Mountains; Field Geology and Construction of Geological Maps and Sections.

(3.) Chronological Geology and Palæontology.—Classification of Formations; Geological Periods; Mineralization and Classification of Fossil Remains; History of the several Periods with the Fauna and Flora of each Distribution, more especially in Canada.

Saturday excursions will be made to points of interest, and Museum demonstrations will be given.

Text-Books.—Dawson's Handbook of Geology, Dana's Manual of Mineralogy. Books of reference will be indicated in the library.

Students in Natural History are entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

For Additional Departments see Honour Course, II., infra.

The Geology course is specially fitted to those students who have taken the National Science studies of the previous years, but others are not excluded.

9. ZOOLOGY AND PALÆONTOLOGY.

Professor, Sir J. William Dawson, LL.D., F.R.S.

Third Year.—Zoology and Palæontology. Elements of Animal Physiology. Classification of Animals. Characters of the Classes and Orders of Animals with recent and fossil examples, taken as far as possible from Canadian species:—the whole with reference to the study of Canadian Animals, recent and fossil. Demonstrations in the Museum. *Text-book.*—Dawson's Handbook of Zoology, with books of reference.

A prize of $20 will be given for a collection of specimens of recent or fossil animals, accurately named. The Prize collections or duplicates of them to remain in the Museum if required. Candidates must be students of Zoology of the previous session, and the prize will not be awarded except for a collection of sufficient merit, and belonging to some one class of recent animals, or the fossils of one geological system or one definite locality.

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10. BOTANY.

Professor:—D. P. Penhallow, B.Sc.

Second Year.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology.

Text-Books—Gray and Bessey. A book prize will be given by the Professor for the best collections of plants and the greatest proficiency in their determination. The collections will be returned after examination. Candidates must have been Students of Botany in the previous Session.

Third Year.—Additional Course. *Vegetable Histology.*—Two lectures with practical work, each week. Microscopical manipulations, micro-chemical reactions, general histology of Phanerogams. Microscopical Drawing.

Fourth Year.—Additional Course. *Vegetable Histology.*—Two lectures with practical work each week. A continuation of the Course in the third year embracing a study of the structure and life history of Cryptogams. Special studies in embryology. No Student will be admitted to the Course in the Fourth Year without having followed that for the Third Year.

Text-books.—Bower and Vines' Practical Botany. Goebel's Outlines of Classification and Special Morphology.

Fee for Additional Course $10 per session for use of instruments and reagents.

A prize will be awarded to the Student showing the greatest proficiency in the work of the two years.

11. CHEMISTRY.

(David J. Greenshields Professorship of Chemistry and Mineralogy.)

Professor:—B. J. Harrington, B.A., Ph.D.

First Year.—A course of Lectures preparatory to the course in Natural Science. The Lectures are illustrated by experiments, and treat of the Elementary Constitution of matter, the laws of Chemical Combination by weight and volume, the Atomic Theory, Quantivalence, Chemical Formulæ and Equations, Chemical Attraction, characteristics of Acids, Bases and Salts, Compound Radicals, the preparation and properties of the non-metallic and metallic Elements, and many of their compounds, &c. A few Lectures are also devoted to the consideration of some of the more important Organic Substances, including Starch, Sugars, the Vegetable Acids and Alkaloids, Alcohol, &c. During the course attention is called as far as possible to the relations of Chemistry to various manufacturing industries.

Students in Arts may attend the course in Practical Chemistry with the First Year in Applied Science, on payment of a fee of five dollars.

Text-Book.—Remsen's Introduction to the study of Chemistry.

Third Year.—Additional Department. (*The Chemistry of the Metals or Organic Chemistry*).—One Lecture a week. (*Practical Chemistry*).—Qualitative Analysis, as in Thorpe and Muir's Qualitative Chemical Analysis, two afternoons a week.

Fourth Year.—Additional Department. A course of Practical Chemistry, in continuation of that of the Third Year.

Note.—New chemical laboratories, capable of accommodating about fifty students, have recently been erected, and afford excellent facilities for practical work.

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12. METEOROLOGY.

Superintendent of Observatory, C. H. McLeod, M.A.E.

Instructions in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

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13. ELOCUTION.

——— Instructor.

Voice culture, including exercises for developing the thorax. Rush's Philosophy of the voice. Grouping of speech. Narrative reading and the reading of poetry. Biblical readings. Dramatic reading and declamation. The instructor will make arrangements for hours to suit students.

14. GYMNASTICS.

JAMES NAISMITH, B.A., Instructor.

The classes will meet at the University Gymnasium, at hours to be announced at the commencement of the Session. The Wicksteed silver and bronze medals (the gift of Dr. R. J. Wicksteed) are offered for competition to Students of the Graduating Class, and to students who have had instruction in the Gymnasium for two sessions,—the silver medal to the former, the bronze medal to the latter. (See Regulations appended.)

II. HONOUR COURSES.

1. CLASSICS.

Third Year.— The Authors to be read in Class, and privately by the Candidate, together with the History and other subjects, are selected at the commencement of the Session, and are divided into *Part I.* and *Part II.*, at the Honour Examination.

Fourth Year.—Part I.—(1) *Greek Authors:*—Æschylus, Prometheus Vinctus; Sophocles, Antigone; Euripides, Medea; Herodotus, Bk. IX.; Xenophon, Hellenics, Bks. I. and II.; Æschines, Contra Ctesiphontem. (2) *Latin Authors:*—Horace, Epistles, Bk. I.; Juvenal, Satires VIII. and XIII.; Persius, Satires, V. and VI.; Livy, Bk. XXI.; Tacitus, Annals, Bk. II.; Cicero, De Officiis. (3) *Greek and Latin Prose Composition:*—As in Arnold's Greek Prose and Smith's Principia Latina, Part V. *Part II.*—(1) *Greek:*—Plato Republic, Books I. and II. Aristotle, The Poetics. Herodotus, Book VIII. Thucydides, Books VI. and VII. Hesiod, Works and Days. Æschylus, Seven against Thebes. Aristophanes, The Frogs. Pindar, Olympic Odes. Theocritus, Idylls I. to VI. Demosthenes, De Corona. (2) *Latin*—Livy, Books XXII. and XXIII. Tacitus, Annals, Book I. Tacitus, Histories, Book I. Virgil, Æneid, Books I. to IV. Plautus, Aulularia. Terence, Adelphi. Juvenal, Sat. X. Cicero, De Imperio Cn. Pompeii. (3) *History of Greece and Rome:—Text Books.*—1. Grote's History of Greece. 2. Arnold's History of Rome. 3. Mommsen's History of Rome. 4. Mahaffy's History of Greek Literature. 5. Cruttwell's History of Roman Literature. 6. Cruttwell and Banton's Specimens of Roman Literature. 7. Donaldson's Theatre of the Greeks. (4) *Composition.*—Composition in Greek and Latin Prose. 5. General Paper on Grammar, History and Antiquities.

2. MENTAL AND MORAL PHILOSOPHY.

THIRD YEAR.

Part I.—Schwegler's History of Philosophy, Chapters 1-21 inclusive; Mill's System of Logic, Books IV. and V.; Murray's Handbook of Psychology, Book II., Parts 2 and 3; Thomson's Outlines of the Laws of Thought. Any two of these subjects, along with the Honour Lectures, may be taken as the Additional Course.

Part II.—Cicero's De Officiis—Fraser's Selections from Berkeley.

FOURTH YEAR.

Part I.—Schwegler's History of Philosophy, Chapters 22–45 inclusive; Lorimer's Institutes of Law; Descartes' Method and Meditations; Green's Prolegomena to Ethics; Mill's System of Logic, Book VI. Any two of these subjects, along with the Honour Lectures, may be taken as the Additional Course.

Part II.—Aristotle's Nicomachean Ethics; Zeller's Stoics, Epicureans and Sceptics; Spinoza's Ethics; Watson's Selections from Kant; Maine's Ancient Law.

N.B.—The class essays of Candidates for Honours are expected to display superior ability in the discussion of philosophical subjects.

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3. ENGLISH LANGUAGE, LITERATURE AND HISTORY.

THIRD YEAR.

Part I.—Early English; Morris and Skeat, Part II., Extt. I-IX. inclusive Spenser.—Faerie Queene, Bk. I.; Milton—Comus; Burke—Reflections on the French Revolution: Hallam—Middle Ages, chaps. 1, 3, 5. (The above-mentioned portion of the Honour work constitutes the Additional Course of the Third Year.) Sweet's Anglo-Saxon Reader; Extt. IV., VIII. and XXI.; Dryden—Annus Mirabilis; Absalom and Achitophel, Part I.; the Preface to the "Fables." Macaulay—Essays on Clive, Ranke's History of the Popes, and Warren Hastings.

Part II.—Sweet's Anglo-Saxon Reader; the pieces in verse; Chaucer—Assembly of Foules (ed. Lounsbury); Sidney—An Apologie for Poetry (ed. Arber, to be obtained by post from the editor, 1 Montague Road, Edgbaston, Birmingham, price 6d.); Milton—Shorter English Poems; Areopagitica (ed. Hales); Addison—Essays on Paradise Lost and on the Imagination (Spectator); Wordsworth—Prelude (Moxon's edition); Leslie Stephen—English Thought in the Eighteenth Century, vol. II., chap. X., sections V.–X. inclusive; Macaulay, vol. I., chap. I.; Green, History of the English People—(Reigns of Eliz and Chas. II.)

FOURTH YEAR.

Part I.—Sweet's Anglo-Saxon Reader, Extt. II., XIII., XX.; Pope—Essay on Criticism, Essay on Man; Shelley—Adonais; Tennyson—In Memoriam; Buckle—History of Civ. in England, 4 chaps. (The above-mentioned portion of the Honour work constitutes the Additional Course of the Fourth Year.) Early English; Morris and Skeat, Part II., Extt. X.–XX. inclusive; Shakspere—Love's Labour's Lost—A Midsummer Night's Dream—Hamlet; Matthew Arnold—Essays in Criticism (the second).

Part II.—Portions of Beowulf (ed. Harrison and Sharp); Sweet's Second Anglo-Saxon Reader; Vespasian Hymns; Sir Thomas More—Utopia (ed. Arber); Villiers—Rehearsal (ed. Arber); Campbell—Pleasures of Hope; Tennyson—Coming of Arthur, Gareth, and Lynette, Holy Grail, Passing of Arthur; Gibbon—Decline and Fall, chaps. L., LI., LXIV., LXV.; Guizot—History of Civilization in Europe; Macaulay—Vol. I., chap. 3; Freeman—Growth of the English Constitution.

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4. MATHEMATICS AND PHYSICS.

First and Second Years — MATHEMATICS.—Hall and Stevens's Euclid; McDowell's Exercises in Modern Geometry; Hall and Knight's Advanced Algebra; Todhunter's or Burnside and Panton's Theory of Equations (selected course); Hind's Plane and Spherical Trigonometry or Lock's Higher Trigonometry, with McClelland and Preston's Spherical Trigonometry, Part I.; Salmon's Conic Sections, chapters 1, 2, 3, 5, 6, 7, and 10 to 13, inclusive; Williamson's Differential and Integral Calculus. (selected course).

Third Year.—MATHEMATICAL PHYSICS. Part I.—1. Minchin's Statics, vol. I. selected chapters. 2. Williamson and Tarleton's Dynamics, chaps. 1 to 8 inclusive. Part II.—Remainder of Minchin's Statics, Vol. I. Besant's Hydro-mechanics, Part I., chaps. 1, 2, 3, 7; Godfray's Astronomy; Parkinson's Optics.

B. A. HONOUR COURSE.

Part I.—MATHEMATICAL PHYSICS.—Honour Course of the Third Year (the whole). PURE MATHEMATICS —Williamson's Differential and Integral Calculus; Salmon's Geometry of Three Dimensions (selected course).

Part II.—PURE MATHEMATICS.—Boole's Differential Equations (selected course). MECHANICS—Minchin's Statics, vol. II., except chapters 14 and 18. Williamson's and Tarleton's Dynamics (the whole, including the Dynamics both of Rigid Bodies and of a Particle). Routh's Dynamics of a Rigid Body (for reference). Besant's Hydro-mechanics.

PHYSICAL ASTRONOMY.—Godfray's Lunar Theory, or Cheyne's Planetary Theory; Newton's Principia, Lib. I., Sects. 1, 2, 3, 9, and 11.

LIGHT.—Lloyd's Wave Theory of Light.

ELECTRICITY AND MAGNETISM.—Ordinary Course, with Cumming's Theory of Electricity and Maxwell's Elementary Electricity.

HEAT, ACOUSTICS } As in ordinary course.

Engineering Students may be Candidates for Honours.

The above course in each year, and the lecture hours assigned to it in the time table are, subject to alterations or omissions which will be made definitely known to candidates for honours at the beginning of the session.

5. GEOLOGY AND NATURAL HISTORY.

THIRD YEAR.

Part I. Mineralogy.—Crystallography. Physical properties of minerals dependent upon light, electricity, state of aggregation, etc. Chemical composition. Principles of classification. Description of species important as constituents of Rocks. (One lecture weekly during First Term, and two during Second.)

Part II. Blowpipe Analysis and Determinative Mineralogy.—(One afternoon weekly in the Laboratory during the session.—*Text Book*—Brush's Determinative Mineralogy and Blowpipe.)

Instructions will be given to the class for study and collection in the vacation.

B. A. HONOUR COURSE.

Part I. (1) *Mineralogy.*—Description of mineral species, particular attention being called to the Economic Minerals of Canada. Calculations of Mineralogical Formulæ, Quantivalent Ratios, etc. (Two lectures weekly in the First term.)

(2) *Palæontology*—Being an extension of that of the third year, with special studies of the more important groups of Fossils. (One lecture weekly in the First Term.)

Part II. (3) *Petrography.*—Essential and accessory constituents of Rocks. Microscopic and macroscopic characters. Preparation of Rock-sections. Microscopic examination of Minerals and Rocks. Principles of classification. Description and determination of Rocks. (One lecture weekly in the Second Term, with additional practical work.)

(4) *Canadian Geology.* Special studies of the Geology of the Dominion Canada. (One lecture weekly in the Second Term.)

(5) *Practical and Applied Geology.*—Including methods of observing and recording geological facts, and searching for mineral deposits—Geology as applied to the Arts. (One lecture weekly in the Second Term.)

Text-books.—Dana, Geikie, Dawson, Nicholson, Survey Reports, etc.

Candidates for Honours will be expected to attain such proficiency as to be able to undertake original investigations in some at least of the subjects of study.

Students in the Faculty of Applied Science may be Candidates for Honours.

ADDITIONAL DEPARTMENT.

Third Year.—Mineralogy as in Part I. above.

Fourth Year.—Palæontology and Practical Geology as in parts I. and II. above. Or the Student may take the Lectures in Mineralogy instead of Palæontology, or those in Petrography or Canadian Geology instead of Practical Geology.

6. MODERN LANGUAGES.

(French and German, both of which must be taken.)

THIRD YEAR.

Part I.—FRENCH.—LA FONTAINE, Les Fables. RACINE, Les Plaideurs. PAUL ALBERT, Littérature du XVIIe siècle. Translation into French :—GOLDSMITH, The Vicar of Wakefield. CORNEILLE, Horace.

GERMAN.—Schiller, Wilhelm Tell. German Prose Composition, Buchheim.

(Either of the above may be taken as the Additional Course in the language to which it belongs. See § III.)

The Ordinary Courses in French and German must also be taken. See § III.

Part II.—FRENCH.—Racine :—Phèdre, Les Plaideurs. Boileau :—L'Art Poétique. Pascal :—Les Pensées. La Bruyère :—Les Caractères. Ampère :—Formation de la Langue française.

GERMAN.—Wieland.—Oberon. History of German Literature ; Gostwick and Harrison, Chaps. I.-V., IX., XIII.

FOURTH YEAR.

Part I.—FRENCH. AUG. BRACHET, Grammaire Historique. PAUL ALBERT, La Littérature française, des origines à la fin du XVIe siècle. EMILE SOUVESTRE, Un philosophe sous les toits. Translation into French :—As You Like It.

GERMAN.—Lessing, Nathan der Weise. German Prose Composition, Buchheim.

(Either of the above may be taken as the Additional Course in the language to which it belongs.)

The Ordinary Courses in French and German must also be taken.

Part II.—FRENCH. Molière :—Le Misanthrope. Victor Hugo :—Hernani. La Rochefoucauld :—Les Maximes. Dr. C. Saucerotte :—L'Esprit de Montaigne. Auguste Brachet :—Grammaire Historique. Etudes des anciens textes français (Demogeot).

GERMAN.—A special study of Goethe's "Faust" (Part I.). Selections from Heine's Lyrical Poems. Behagel.—Die Deutsche Sprache. Gostwick and Harrison, Chaps. XXV., XXX.

For First and Second Rank Honours the successful Candidates must be capable of speaking and writing both languages.

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7. SEMITIC LANGUAGES.

THIRD YEAR.

Part I.—Hebrew.—Genesis (the whole book). Isaiah, Chaps 40-66. *Aramaic.*—Daniel. *Syriac.*—The Peshito : St. John, Chaps. 1-5. *Literature.*—Driver's "Uses of the Tenses in Hebrew."

Part II.—Hebrew.—Ecclesiastes (the whole Book). Psalms, Books 1 and 2 (1-72). *Aramaic.*—Targum of Onkelos, Genesis, Chaps. 1-10. *Syriac.*—The Peshito,—Romans, Chaps. 1-5. *Literature.*—Davidson's "The Hebrew Text of the Old Testament."

FOURTH YEAR.

Part I.—Hebrew.—Proverbs, chaps. 20-31. Job, chaps. 27-42. *Aramaic.*—Ezra. *Syriac.*—The Peshito.—St. John, chaps. 6-15. *Literature.*—Muller's "Outlines of Hebrew Syntax."

Part II.—Hebrew.—Deuteronomy (the whole Book). Malachi (id.). *Aramaic.*—Selections from the Targums of Jonathan Ben Uzziel, etc. *Syriac.*—Bar Hebræus: Selections from his Chronicles. *Literature.*—Renan's "A General History of the Semitic Languages."

Additional Department:—(*For Third and Fourth Years.*) *The Aramaic Language:*—Brown's Aramaic Method and Translation. The Aramaic portions of Scripture, Targums of Onkelos and Jonathan Ben Uzziel. *The Syriac Language:*—Grammar, Translation from the Peshito.

LECTURES IN THE UNDERGRADUATE COURSE IN THE FACULTY OF ARTS.

SESSION OF 1890–91.

	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	9	Classics.	† Mathematics. (*b*)	Mathematics.	† Mathematics. (*b*)	Mathematics.
	10	Mathematics.	Classics.	Classics.	Classics.	Classics.
	11	English.	* French.	* French.	* French.	English.
	12	Elementary Chemistry.	* German. * Hebrew.	English.	* German. * Hebrew.	Elementary Chemistry.
Second Year.	9	* French.	Logic.	* French.	* Hebrew.	* French.
	10	Classics.	* German. Hebrew.	Logic.	Logic.	* German. † Mathematics.
	11	Mathematics.	Classics.	† Mathematics. Botany.	Classics.	Classics.
	12	† Mathematics. Botany.	* German. (*c*)	English. (*b*)	* German (*c*)	English.
Third Year.	9	English Literature.	Classics.	† Classics. † Math. Phy.	Classics.	†Classics. † English. † Geol.
	10	† Geology. (*b*) German. † Math. Physics † Mental Philosophy.	French. † Ment. Phil.	† Anglo-Saxon. Physics (Mathematical).	French. Chemistry.	† Mathematical Physics. * Syriac, etc.
	11		Zoology.	Mental Philosophy.	Zoology.	Rhetoric.
	12	Mental Philosophy.	‡ Physics (Experimental).	Classics.	‡ Physics (Experimental).	Physics (Mathematical).
	1		Hebrew.		Hebrew.	German.
Fourth Year.	9	† Math. Physics. † English	Astronomy. (*a*)	† Classics. Geology.	Astronomy. (*a*)	† Classics.
	10	Geology.	French. † Ment. Phil. German.	English Literature.	† Mental Philosophy. German, History.	Geology.
	11	Classics. † Geology.	Moral Philosophy. Chaldee.	Classics.	Moral Philosophy. Chaldee.	French. † Geology. Anglo-Saxon and Early English.
	12	Moral Phil.	‡ Physics (Experimental).	† Geology. † Math. Phy.	‡ Physics (Experimental).	German. † Math. Physics.
	1				* Hebrew.	

(*a*) During First Term. (*b*) Second Term. (*c*) For beginners entering 2nd Year. † For Candidates for Honours
* The Student may take at his option French or German in the first two years, or, if a Theological Student, Hebrew. ‡ From Nov. 1st.
Classes at 1 p.m. may be changed to other hours.
Library open every day, 9 to 4. The Museum will be opened as arranged by the Principal.
Determinative Mineralogy, Wednesday, at 2 p.m. Practical Chemistry, Monday and Thursday, at 2 p.m. for 3d and 4th Years; First Year with the Class in applied Science.

Special Course for Women.

IN THE FACULTY OF ARTS.

Donalda Endowment.

Professors and Lecturers (as on page 27). Lady Superintendent, Miss Helen Gairdner.

The classes for women under this endowment are wholly separate, except those for Candidates for Honours (including most of the additional courses in the Third and Fourth Years). The examinations are identical with those for men. Women will have the same privileges with reference to Classing, Honours, Prizes and Medals as men.

Regulations for Examinations, Exemptions, Boarding Houses, Attendance, Conduct, Library and Museum are the same as for men. Undergraduates wear the Academic Dress: others do not.

The *Jane Redpath Exhibition* is open for competition, at the beginning of the First or Second Years, to both men and women.

Another Exhibition (value $100, along with free tuition), is open for competition in the First or Second Year, to students of the Donalda Department only.

One free tuition may be awarded to a candidate who approaches very near to the winner of either of the Exhibitions.

The income of the *Hannah Willard Lyman Memorial Fund* will be given in prizes.

I. MATRICULATION AND ADMISSION.

Classics.—I. *Latin.*—Cæsar, Bell. Gall., Book I; and Virgil, Æneid, Book I., lines 1-300; Latin Grammar.

Greek.—Xenophon, Anabasis, Book I., Greek Grammar.

Candidates who cannot pass in Greek may substitute an additional modern language, subject to the same regulations throughout the course of four years.

Mathematics.—Arithmetic; Algebra to Simple Equations (inclusive); Euclid, Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar, *including Analysis*. A paper on the leading events of English History. Essay on a subject to be given at the time of the Examinations.

French.—Grammar up to the beginning of Syntax. An easy translation from French into English. Candidates unable to take French are not excluded, but will be required to study German after entrance.

An equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners on application made though the Professor of Classics.

Partial Students.—Candidates unable to pass in all the above subjects may be admitted as Partial Students, in the separate classes; if prepared to enter in three of the subjects of the ordinary course of study, they may in the First Year make good their standing as Undergraduates at the Christmas or Sessional Examinations.

Occasional Students.—Ladies desirous of taking one or two Courses of Lectures in the separate classes for women, as Occasional Students, will report their names and the classes they desire to attend to the Lady Superintendent, and may then procure tickets from the Secretary of the University.

II. ORDINARY COURSE OF STUDY FOR THE DEGREE OF B.A.

In separate classes.

First Year.—Classics; French or German; English Grammar and Literature Pure Mathematics; Elementary Chemistry.

Second Year—Classics; French or German; English Literature; Elementary Psychology and Logic; Pure Mathematics; Botany.

Third Year.—Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics); with any three subjects out of the two following divisions at the option of the Student, provided two be selected from one division, and one from the other:—

I. Literature, etc.—(*a*) Greek or Latin, according as Latin or Greek has been previously chosen. (*b*) French or German (whichever has been taken in the first two years). (*c*) English and Rhetoric. (*d*) Mental Philosophy.

II. Science.—(*e*) Optics and Descriptive Astronomy. (*f*) † Experimental Physics, First Course. (*g*) Natural Science (Zoology).

Fourth Year.—Latin or Greek, same Language as in Third Year; Mathematical Physics (as in Third Year), or Astromomy and Optics; Moral Philosophy; with any three subjects out of the two following divisions at the option of the Student, provided two be selected out of the one division, and one out of the other:—

I. Literature, etc.—(*a*) Greek or Latin, according as Latin or Greek has been taken above. (*b*) French or German, same language as in Third Year (*c*) History.

II. Science.—(*d*) Astronomy and Optics, if not chosen as above. (*e*) † Experimental Physics (Second Course). (*f*) Natural Science (Geology).

† Undergraduates claiming exemption (see § V.) cannot take Astronomy and Optics or Experimental Physics if they have not taken the Third Year Mathematical Physics.

Instead of two distinct subjects in one of the above divisions, the Student in either Third or Fourth Year may select one subject only, together with an additional course in the same or any other of these subjects under the above rules (if arrangements be made by the Faculty for it), provided she has been placed in the first class in the corresponding subject at the preceding Sessional Examination (viz., Intermediate or Third Year, according to standing).

The additional course is intended to be more than an equivalent, in the amount of work involved, for any of the other subjects in the division.

Additional courses are provided at present in Botany and Practical Chemistry.

Gymnastics.—A class will be conducted by Miss Barnjum, which will be optional, and open to Occasional Students.

Elocution.—Should Students offer, a class for Reading and Elocution will be opened if possible.

HONOUR COURSES AND ADDITIONAL COURSES.

(*In Mixed Classes.*)

Undergraduates desirous to take one of the Honour Courses in Classics Mathematical Physics, Mental and Moral Philosophy, English Language and Literature, History, Geology and other Natural Sciences, Modern Language, or such portions of the Honour Courses as constitute the "Additional Courses," may in the Third and Fourth Years obtain exemptions to the same extent as those given to men, but must take the same lectures with men.

Details will be found in Section XII. of the Calendar.

III. DEGREES.

Students are admissible to the degrees of B.A., M.A., and LL.D., conferred in the usual way, on the usual conditions; and will be entitled to all the privileges of these degrees, except that of being elected as Fellows.

IV. FEES.

Matriculation Fee for the First Year, to be paid in the Year of Entrance only $4 00

Sessional Fee 20 00

Library Fee (optional) 4 00

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation Fee, and $5 for each Course which they attend, or $20 for all the Courses.

Occasional Students.—$5 for each class.

For Gymnastics $2.50 for the session (optional).

The above Fees are to be paid to the Registrar of the University, from whom Tickets for the Library and copies of the Library Rules may be obtained.

For special fees see section XI, *ante*.

(Associates in Arts, who, at their special Examination, have passed in Latin, Algebra and Geometry, are not required to present themselves for the Matriculation Examination).

Exemptions from fees may be allowed to the highest pupil of the Girls' High School of Montreal, and of other Schools, on the same terms as to men.

One exemption from tuition fees is annually allowed to the pupil (boy or girl) of the Montreal High School holding an exemption from the Schools of the Protestant Commissioners, Montreal, who has taken the highest marks at the A.A. Examinations, and is recommended by the Commissioners.

For time of payment and other rules regarding Fees, see § XI., *ante*.

V. LODGINGS, &c.

Women not resident in Montreal, proposing to attend the classes and desiring to have information as to suitable lodgings, are requested to intimate their wishes in this respect to the Registrar of the University, at least two weeks before the opening of the session.

Students desiring information as to the above or other matters are referred to the Lady Superintendent, who will be found in her office in the rooms of the Donalda Department, every day during the session, except Saturday.

LECTURES OPEN TO OCCASIONAL STUDENTS, SESSION 1890-91.

CHEMISTRY :—*Dr. Harrington.* Tuesday and Thursday at 12.

BOTANY :—*Prof. Penhallow.* Monday at 3, Wednesday at 12.

ZOOLOGY :—*Sir Wm. Dawson.* Tuesday and Thursday at 12.

GEOLOGY :—*Sir Wm. Dawson and Mr. Adams.* Monday and Friday at 12, Wednesday at 10 a.m.

EXPERIMENTAL PHYSICS :—*Dr. Johnson.* Tuesday and Thursday, at 11 a. m.

PSYCHOLOGY AND LOGIC :—*Rev. Dr. Murray and Mr. Lafleur.* Tuesday and Friday at 4 p. m., and Thursday at 12.

MENTAL PHILOSOPHY :—*Rev. Dr. Murray and Mr. Lafleur.* Monday and Wednesday at 4 p. m.

MORAL PHILOSOPHY :—*Rev. Dr. Murray.* Tuesday and Wednesday at 12, and Friday at 11 a.m.

RHETORIC :—*Mr. Lafleur.* Tuesday at 11 a.m.

ENGLISH:—*Prof. Moyse and Mr. Lafleur.* Language and Literature, Tuesday, Wednesday and Friday at 4 p.m. Poets of the 19th Century, Wednesday, 3 p.m. Shakespeare, every alternate Friday at 3 p.m. Chaucer—Monday at 10 a.m.

HISTORY:—*Prof. Moyse.* Thursday at 9 a.m.

LATIN AND GREEK*:—*Rev. Dr. Cornish and Dr. Eaton.*

FRENCH*:—*Dr. Darey.*

GERMAN*:—*Mr. Toews.*

MATHEMATICS AND MATHEMATICAL PHYSICS*:—*Dr. Johnson and Prof. Chandler.*

Those Courses, in which two lectures weekly are delivered, will each amount to about 45 lectures, and the others in proportion.

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* The Lectures on these subjects extend over all the Years of the Course, and the hours will depend on the standing of students with respect to previous preparation as ascertained by examination.

FACULTY OF ARTS.

*Ordinary Lectures in the Donalda Special Course for Women.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	12		Chemistry.		Chemistry.	Greek.
	2	Mathematics.	French.	Mathematics.	French.	Mathematics.
	3	Latin.	German.	Latin.	Latin.	German.
	4	Greek.	English.	English.		English.
Second Year.	10	Mathematics.				
	11	Greek.		Latin.	German.	
	12		Latin.	Botany.	Logic.	
	2					
	3	Botany.	French.	English.	French.	English.
	4	German.	Logic.	Greek.		Logic.
Third Year.	10	English.	Classics.		Classics.	French.
	11	French.	Rhetoric Exp. Physics.		Exp. Physics.	
	12	Classics.	Zoology.	Math. Physics.	Zoology.	Math. Physics.
	3	German.			German.	
	4	Metaphysics.		Metaphysics.		
Fourth Year.	9	Astronomy (*a*)			History	
	10	French.	Classics.	Geology.		French.
	11	German.	Exp. Physics.	Astronomy (*a*).	Exp. Physics.	Moral Phil.
	12	Geology.	Moral Phil.	Moral Phil.	Classics.	Geology.
	2					German.
	3					

The hours for Practical Chemistry and Additional Botany will be arranged at the beginning of the Session.

* For Honour Lectures see previous table. Honour Lectures in Mathematics will be given in the First and Second Years at hours to be appointed during the session.

(*a*) During First Term.

Faculty of Applied Science.

THE PRINCIPAL (*ex-officio*).

Professors:—HARRINGTON, BOVEY, McLEOD, CHANDLER.

Associate Professors:—DAWSON, JOHNSON, DAREY, MOYSE, PENHALLOW.

Associate Lecturers:—LAFLEUR, TOEWS, ADAMS.

Assistants:—TAYLOR, MIDDLETON, HERSEY, FLEMING.

Dean of the Faculty:—HENRY T. BOVEY, M.A., M.INST. C.E.

The Instruction in this Faculty is designed to afford a complete preliminary training, of a technical as well as theoretical nature, to such Students as are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Four distinct Departments of study are established, viz.:

(1).—Civil Engineering and Surveying. (2).—Mechanical Engineering (Thomas Workman endowment). (3).—Mining Engineering. (4).—Practical Chemistry.

Each of these extends over four, or, under certain conditions, three years, and is specially adapted to the prospective pursuits of the Student.

The Degrees conferred by the University upon such undergraduates of this Faculty as shall fulfil the conditions and pass the Examinations hereinafter stated, will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular Department of study pursued; and, subsequently, the degrees of "Master of Engineering" or of 'Master of Applied Science." (§ V.)

Examinations for Land Surveyors:—Any graduate in the Faculty of Applied Science, in the Department of Civil Engineer-

ing and Land Surveying, may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entering the University, or in the First or Second Year of attendance.

Students in the Civil Engineering Department, who have obtained first or second class standing in Mathematics and Surveying at the end of the third year and who at the beginning of their Fourth Year give notice to the Faculty of their intention to prepare for the examination for Dominion Topographical Surveyors, will receive preparation for that examination, more especially in Spherical and Practical Astronomy and Geodesy, and may be exempted from the Heat and Hydraulics, or from the Designing of the Fourth Year.

Partial Students may be admitted to the lectures and examinations in the above special work.

§I. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation must present themselves for examination on the 16th of September, 1890. They may, however, be admitted at a later period of the Session upon special application, if qualified to take their places in the classes in progress.

JUNIOR MATRICULATION. For entrance into the First Year, two examinations are held;

(1) In the first week in June, when Schools may send their pupils for examination to McGill College.

N.B. Schools at a distance may send to the Secretary of the University the names of Deputy Examiners, together with a list of candidates on or before May 15th, and, if approved, the examination papers will be forwarded to them.

(2) At the opening of the session, on September 16th and following days, in McGill College alone.

The subjects of examination are:—

Mathematics.—Arithmetic*; Algebra, to the end of Simple equations; Euclid's Elements, Books I., II., III.

English.—Dictation, Grammar (including Analysis) and Composition.

French.—Grammar to Syntax (exclusive) and easy translation.

* In September, 1891, and afterwards, a knowledge of the Metric System of weights and measures will be required.

Candidates unable to take the French examination are allowed to enter, but must take German as the Modern language of their undergraduate course.

Candidates who have passed the Associate in Arts examinations in the above subjects will be received as Matriculated Students in the First Year.

SENIOR MATRICULATION. For entrance into the Second Year only one examination is held, viz., on September 16th and following days, in McGill College. The subjects of examination are :—

Arithmetic.

Algebra.—To the end of Quadratics (as in Colenso's Algebra, Part I).

Euclid.—Books, I., II., III., IV., VI., and XI., and the definitions of Book V.

Plane Trigonometry.—Including solution of Triangles, and the use of Mathematical Tables.

Chemistry.—As in Remsen's Introduction to the Study of Chemistry.

English.—Dictation, Grammar (including Analysis), Composition, and the leading facts of the History of England.

French or German.—Grammar and easy translation.

Candidates unable to pass in Chemistry may be allowed by the Faculty to enter and take the First Year lectures on Chemistry.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science may be admitted to an equivalent standing.

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§I. MEDALS, EXHIBITIONS AND PRIZES.

1. The BRITISH ASSOCIATION GOLD MEDAL AND EXHIBITION, founded by the British Association for the Advancement of Science in commemoration of the meeting held in Montreal in the year 1884.

The British Association Gold Medal for the Session 1890-91 will be open for competition to Fourth Year Students of the Civil Engineering Course. Candidates must take a first-class general standing in the Ordinary Course, and the medal will be awarded to the Student who stands first in the Advanced Course. (§ IV. B.)

2. THE STANLEY SILVER MEDAL (the gift of His Excellency The Right Honorable Lord Stanley.)

The Stanley Medal for the Session 1890-91 will be open for competition to Fourth Year Students of the ordinary course in Mechanical Engineering.

The following Exhibitions and Prizes will be open for competition at the beginning of the session, students being required to notify the Dean of their intention to compete at least one week before the commencement of the examinations :—

3. A British Association Exhibition of $50.00 to Students entering the Fourth Year, the subjects of examination being the Theory of Structures, Mathematics and Mathematical Physis of the Ordinary Course.

4. A Scott Exhibition of $66.00, founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, to Students entering the Third Year, the subjects of Examination being :—

[*a*] Macaulay's History of England, Vol. I., cap. I ; Scott's Lady of the Lake. [*b*] Mathematics. [*c*] Mechanism.

5. A British Association Exhibition of $50 will be open for competition to Students entering the Second Year, the subjects of Examination being :—

(*a*) Macaulay's History of England, Vol. I., cap. I.; Shakespeare's Tempest ; (*b*) Mathematics.

6. Two Prizes in Books, each of the value of $25, one presented by E. B. Greenshields, B A., and one from the British Association Medal Fund, for the two best Summer Reports or Essays.

7. Two Prizes, one of $15 and one of $10, from the British Association Medal Fund, to Students entering the Third Year, for proficiency in levelling or transit work.

8. A Prize of $25,00 for the best mechanical model, preference being given to one of original design, presented by W. E. Gower, M. Can. Soc. C. E.

9. A Prize of $25.00, from the British Association Medal fund, to Students entering the Second Year, the subjects of examination being :—(*a*).—Inorganic Chemistry ; (*b*).—Elements of Organic Chemistry ; (*c*).—Practical Chemistry.

10. An Exhibition on the Thomas Workman endowment, being an exemption from fees, of the value of $88, to be offered for

competition in the September Matriculation Examination of the First Year, to candidates intending to follow the Mechanical Engineering course. Application as to conditions must be made to the Dean on or before September 1st.

11. Prizes or certificates of merit are given to such Students as take the highest place in the Sessional and Degree Examinations.

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§ III. SPECIAL PROVISIONS.

1. Partial Students may be admitted to the professional classes upon payment of special fees (§ VII.)

2. Undergraduates in Arts may, if allowed by the Faculty of Arts, be admitted to the Professional Classes in Applied Science on payment of the fees for these classes.

3. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4. Students who have passed the Intermediate in Arts, with standing not lower than Second Class in Mathematics, have the privilege of entering the Second Year in Applied Science, and will be exempted from one of the Departments in the Third and Fourth Years in Arts.

5. Undergraduates in Arts of the Second and Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they may have previously attended as Students in Arts, but must pass all the examinations.

6. Students who have failed in a subject in the Christmas or Sessional Examinations, and who desire to regain their standing, are required to make a written application to the Dean of the Faculty for a supplemental examination. Unless such supplemental examination is passed, students will not be allowed to proceed to any subsequent examination in that subject.

7. Students of the Second, Third and Fourth Years will be required to answer satisfactorily a weekly paper on such subjects of the course as shall be determined by the Faculty.

8. Students who fail to obtain their Session, and who, in consequence, repeat the Year, will not be exempted from examination in any of those subjects in which they may have previously passed,

except by the express permission of the Faculty. Application for such exemption must be made at the commencement of the Session.

9. A Student may obtain a certificate of standing on payment of a fee of $2.00.

10. The headquarters of the Canadian Society of Civil Engineers is at present located in Montreal. The Society holds fortnightly meetings, at which papers upon practical currrent engineering subjects are read and discussed. Undergraduates joining the Society as Students may take part in these meetings and acquire knowledge of the utmost importance in relation to the practical part of the profession.

§ IV. COURSES OF STUDY.

A. ORDINARY COURSES.

Civil Engineering.	Mechanical Engineering.	Mining Engineering.	Practical Chemistry.
FIRST YEAR.			
Arithmetic, Euclid.	Arithmetic, Euclid.	Arithmetic, Euclid.	Arithmetic, Euclid.
Algebra. Trigonometry	Algebra. Trigonometry	Algebra. Trigonometry	Algebra. Trigonometry
Geometrical Conics.	Geometrical Conics.	Geometrical Conics.	Geometrical Conics.
Solid Geometry.	Solid Geometry.	Solid Geometry.	Solid Geometry.
Descriptive Geometry (By permission of the Faculty.)	Descriptive Geometry. (By permission of the Faculty.)	Descriptive Geometry. (By permission of the Faculty.)	Descriptive Geometry. (By permission of the Faculty)
Freehand Drawing.	Freehand Drawing.	Freehand Drawing.	Freehand Drawing.
Chemistry.	Chemistry.	Chemistry.	Chemistry.
Sanitation.	Sanitation.	Sanitation.	Sanitation.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.
SECOND YEAR.			
Mechanism.	Mechanism.	Practical Chemistry.	Practical Chemistry.
Materials.	Materials	Mechanism.	
Surveying.	Surveying.	Surveying.	
Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.
Algebra.	Algebra.	Algebra.	
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.	
Calculus.	Calculus.	Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics. Marine Engines.	Experimental Physics.	Experimental Physics.
Zoology.	Mechanical Work.	Zoology.	Botany.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.
THIRD YEAR.			
Theory of Structures.	Theory of Structures.	Theory of Structures.	Practical Chemistry.
Materials,	Materials.	Materials.	Theoretical Chemistry.
Surveying.	Machinery & Millwork	Mining.	
	Loco. Design & Cons.		Blowpipe Analysis.
Descriptive Geometry.	Descriptive Geometry.	Practical Chemistry.	Mineralogy.
Analytical Geometry.	Analytical Geometry.	Blowpipe Analysis.	
Calculus	Calculus	Descriptive Geometry.	
Sphl. Trigonometry.		Analytical Geometry.	
Practical Astronomy.		Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics,
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics
Geology & Mineralogy.	Mechanical Work.	Geology & Mineralogy	Zoology.
Modern Languages.*	Modern Languages.*	Modern Languages.*	Modern Languages.*
FOURTH YEAR.			
Theory of Structures.	Theory of Structures.	Assaying.	Practical Chemistry.
Mathematics.	Mathematics.	Mathematics.	Theoretical Chemistry.
	Machinery & Millwork	Metallurgy.	Metallurgy.
	Materials.	Geology (advanced).	Assaying.
	Loco. Design & Cons	Mineralogy (advanced.)	Mineralogy
Heat & Heat-Engines.	Heat & Heat-Engines.	Heat & Heat-Engines.	Geology.
Hydraulics.	Hydraulics.	Hydraulics.	
Materials.	Materials.	Materials.	
Designs.	Designs.	Designs.	
Estimates. Spec'ns.	Estimates. Spec'ns.	Estimates. Spec'ns.	
Modern Languages.*	Modern Languages.*	Modern Languages.*	Modern Languages.*

(1) During the summer recess the Students in the 2nd, 3rd and 4th years are to employ themselves in some practical work (Mechanical Engineering students in a work-shop), and they are also to prepare a report on such work, to be handed in not later than October 1st. Credit will be given for this Report (or Essay) in the subsequent Sessional Examinations.

(2) Students are not allowed to take subjects which do not form part of their course, without the sanction of the Faculty.

* Modern languages not imperative in the Third and Fourth Years.

B. ADVANCED COURSES.

1. Civil Engineering.—The higher Mathematics and Mathematical Physics, and the higher branches of Applied Mechanics (*Strength of Materials*, *Theory of Structures*, *Heat and Heat Engines*, *Hydraulics*).

2. Mechanical Engineering.—The higher Mathematics and Mathematical Physics, and the higher branches of Applied Mechanics. (*Strength of Materials*, *Dynamics of Machines*, *Heat and Heat Engines*).

3. Mining Engineering.—Study of Ore-Deposits (as in Phillips). Metallurgy. Theory and practice of Metal-Mining and Ore-Dressing. Special work in mineral analysis, with an Essay thereon.

4. Chemistry.—Organic Chemistry, Industrial Chemistry, Mineralogy and special laboratory work with an Essay.

N. B.—A Student will not be allowed to take rank in an Advanced Course unless he has obtained a first class general standing in the Ordinary Course of the same Department.

The Advanced Courses in the Departments of Civil and Mechanical Engineering extend over two years. Students who have passed a creditable examination in the Mathematics of the Second Year may take these Courses.

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§ V. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

1. Christmas and Sessional Examinations.

There will be a Christmas Examination for Students of the First Year in all the subjects, and for Students of the Second, Third and Fourth Years in Mathematics, and in those subjects which they take in the Faculty of Arts. A Sessional Examination in all the subjects will be held at the end of the First and Second Years.

2. Degree Examinations.

(*a*) There will be a Primary Examination at the end of the Third Year in all the subjects of that year. Candidates must pass this Examination before entering the Final Year.

(*b*) There will be a Final Examination for the degree of Bachelor of Applied Science at the end of the Fourth Year in all the subjects of that year.

The General Classification for the Degree Examination will be under two heads, viz. :

First, those who have satisfied the Examiners in the Advanced Courses, in order of merit.

Secondly, those who have satisfied the Examiners in the Ordinary Courses in order of merit.

Special Certificates may be given for proficiency in particular subjects.

Certificates may be given to Students who have passed the Special Courses added to the curriculum.

Students who take their Degree in one of the Courses provided by the Faculty of Applied Science may obtain credit in either of the remaining Courses, by attending one or more subsequent sessions the necessary provisions for which will be made.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years standing, and must produce satisfactory certificates of having been engaged during that time upon *bona fide* work in either the Civil, Mechanical, or Mining Branch of Engineering.

They must pass with credit an Examination extending over the general Theory and Practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

Candidates must present applications for Examinations, together with the necessary certificates and fees. The Faculty will notify the candidates whether their certificates are satisfactory, and also of the date of the Examination.

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an Examination on the Theory and Practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading.

§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts.

§ VII. LIBRARY AND MUSEUM.

Students in this Faculty have the same privileges with reference to the Library and Museum as Undergraduates in Arts.

§ VIII. FEES.

N.B. FOR FEES OF NEW STUDENTS SEE "SPECIAL ANNOUNCEMENT."

In the Course of Civil Engineering. $45 ; Library, $4. In all $49 for each Session.

In the Course of Mechanical Engineering.—$45 ; Library, $4. In all $49 for each Session.

In the Course of Mining Engineering.—$55 ; Library, $4. In all $59 for each Session.

In the Course of Chemistry.—$55 ; Library, $4. In all $59 for each Session.

Fee for Degree of Bachelor of Applied Science, (including the Registration fee) $12.50.

Fee for Degree of Master of Engineering or Master of Applied Science—$25.

If for any Special reason the Degree of Ma. E. or M.A. Sc. be granted *in absentia* the fee will be $40.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each Session. In case of default, the student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty on payment of a fine of $1.

The B. A. Sc. fee must be paid before the final Examinations.

Laboratory Students are required to purchase their own chemicals, &c. The larger articles of apparatus will be supplied by the Laboratory, the Students being responsible for breakage.

Partial students may be admitted to the Professional Classes in any year by payment of the ordinary fees for that year ; or they may attend the lectures on any subject by payment of a special fee.

Graduates in the Faculty of Applied Science may take further courses on payment of half the ordinary tuition fees.

Students taking Blowpipe Analysis, when it does not form part of their course, are required to pay a fee $5.

Partial Students may attend the course of Instruction in Meteorology on paying a fee of $5.

§ IX. COURSES OF LECTURES.

Note—Extensive changes in the technical courses will be made before the beginning of the session. See Special Announcement.

I. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor :—HENRY T. BOVEY, M.A., M.INST.C.E. (William Scott Professor of Civil Engineering.)

Civil Engineering.

The course of instruction in Civil Engineering will include the following :—Mechanism, Earthwork, Masonry, Carpentry, Structures of Timber, Stone and Iron, the Construction of Common Roads, Rail Roads, Bridges, Viaducts, Tunnels, Canals, River, Harbour and Sea Works, Drainage Works, Lighthouses, Works connected with Irrigation and Water Supply, etc.

Applied Mechanics.

The subject of Applied Mechanics will be treated under two heads :—

(*a*) The Strength of Materials, embracing a study of Work, Inertia, Energy and Entropy, Strength, the Stiffness, and Resilience of Materials, Beams or Girders, Pillars, Shafts, Structures (*simple and complex*), Earthwork, Retaining Walls and Arches.

(*b*) Hydraulics, comprising the Theory of Hydrostatics and Hydrodynamics, the Flow of Liquids through Orifices, Pipes and Canals, the Action of a Stream on inclined or curved Vanes (*fixed or revolving*), Hydraulic Machines *Pressure Engines*, *Vertical Water Wheels*, *Turbines*, *Centrifugal Pumps*), Pneumatics.

Heat and Heat-Engines.

The course of instruction in this Department will embrace :—General Description of the Steam Engine, the Theory of Heat, the Application of Heat to Thermal Machines, the production of Heat and Steam, and also :—

(*a*) The movement and distribution of Steam, including the action of Steam in a Cylinder, the methods and regulations of the distribution of Steam, Systems of Cut-off, the general disposition of Cylinders, Condensers, &c,

(*b*) The modes of transmission and a consideration of certain special machines.

(*c*) The construction of an Engine, under which head will be considered Rivets, Bolts, Screws Sockets, Keys, Cylinders, Pistons, Organs of Distribution, Organs of Transmission.

(*d*) The construction of Special Machines.

Designs, Estimates.

Engineering Students will also prepare designs, specifications, and estimates of such works as are usually undertaken by the Engineer.

Each Student works independently, under the personal supervision of the Professor of Engineering, and makes such drawings and caculations as would be needed were the structure designed to be actually carried out.

SANITATION.

Mr. R. P. Fleming, M. Can. Soc. C. E., Engineer to the Montreal Sanitary Association, will deliver a series of lectures at 8 p.m. on Tuesdays, on the following:—

House Drainage. External and Internal Drains (size, grade, materials, laying, jointing, and flushing). Ventilation of Drains (different kinds of traps, merits and demerits, &c). Soil and Waste Pipes (materials, joints, ventilation &c). Fixtures, traps, tests (different kinds, their merits and demerits). Different systems of house drainage. Flushing Tanks. Methods of examining existing systems of drainage and of remodelling them should they be found defective illustrated hy practical examinations.

Ventilation.—Natural and mechanical. Principles and merits of various systems. Methods of caculation &c.

Damp.—French drains for removal of surface water.

Medical and Partial Students will be admitted to the lectures on Sanitation on payment of a fee of $6.

Students in Applied Science may attend the course of lectures on Hygiene in the Medical Faculty, on payment of a fee of $6.

II. MECHANICAL ENGINEERING.

(*In the Thomas Workman Department.*)

Professors:— HENRY T. BOVEY, M.A., M.I.M.E.
C. H. MCLEOD, MA.E., M.CAN.SOC.C.E.

(A Professor of Mechanical Engineering will be appointed before the opening of the Session.)

Mechanism.

The lectures on Mechanism will treat of:—The object and structure of a machine, conversion and modification of motion, aggregation of motion, velocity ratios, linkwork, the teeth of wheels and trains of wheels, indicator diagrams and measurement of H. P., escapements, connections, various elementary combinations. Shop visitation by the class.

Theory of Machines.

This Branch will comprise:—

(*a*) *The transmission of work*, including the measurement of work, the efficiency of machines, dynamical friction, viscosity, and the methods of transmitting work (*by continuous rotation, oscillation, belts, water, and compressed air.*)

(*b*) *The modification of Work and Stores of Energy*, embracing a study of the actual energy of moving pieces, springs and weights.

(*c*) *Governing and controlling Machines*, including a consideration of uniform effort, variable resistance, machines driven by fluid pressure, differential governors.

(*d*) *Balancing Machinery.*

Mechanical Work.

A course of lectures will be given on the following specific Departments of Mechanical Engineering, and will treat entirely of the principles and results of actual practice:—The different classes of machinery, Belts, Gearing, Forging, Hammers, the Tempering of Steel Tools, Vice-work, Fitting and Finishing, Lathes and Lathe-work, Planing, Slotting and Shaping Machines, Boring and Drilling, Milling and Milling tools, Screw cutting, the Slide-valve, Standard Measures, Gauging Implements, Rivetted Joints, Fastenings, Pipes and Cylinders, Journals, Bearing, Shafting, Linkwork, Pistons and Stuffing Boxes, Lubricators, Moulding and Founding.

Students before obtaining their degree in this course must present certificates of having been employed for ar least eight months in Mechanical work-shops.

ENGINE DESIGN AND CONSTRUCTION.

SECOND, THIRD, AND FOURTH YEARS:—Session 1890-91.

Mr. T. Middleton, M. Can. Soc. C. E., Mechanical Engineer, will give a course of lectures on the design and construction of Compound and Triple Expansion Marine Engines and Boilers, including radial Valve gears.

III. MINING ENGINEERING.

Professor:—B. J. HARRINGTON, B A., PH.D.

The object of this course is to give Students a knowledge of the characters and modes of occurence of various economic minerals, together with the methods employed for their extraction and subsequent treatment.

The lectures on Mining are given during the Third Year, and among the subjects taken up the following may be mentioned:—Blasting and the nature and use of different Explosives, Quarrying, Hydraulic Mining, Boring; the Sinking, Timbering and Tubbing of Shafts; Driving and Timbering of Levels, Underground Conveyance and Hoisting, Drainage and Pumping, Lighting and Ventilation of Mines, special methods of Exploitation employed in the working of Metalliferous

Deposits or of Coal Seams, &c. During this year, also, instruction is given in Blowpipe Analysis, the object of which is to enable Students by means of the blowpipe and a few simple re-agents to detect the nature of different Minerals or Ores. On account of the small quantity of apparatus required, and the rapidity with which accurate results may be arrived at, a knowledge of this subject will be found most useful to those engaged in geological or other field-work.

In the Fourth Year a short course of lectures on Metallurgy is given, and assays are made of various Ores, Fuels, &c.

NOTE.—The lectures on Mining and Metallurgy are illustrated by a series of Models.

IV. DESCRIPTIVE GEOMETRY AND SURVEYING.

Professor :—C. H. McLEOD, MA.E.

Descriptive Geometry.

SECOND YEAR.—(1).—Linear Drawing. (2).—Orthographic projection, including penetrations, developments, sections, etc. (3).—Problems on the straight line and plane. (4).—Isometric projection.

THIRD YEAR.—(1) The projections of plane and solid figures. Curved surfaces and tangent planes. Intersections of curved surfaces. Graphical determination of spherical triangles. (2)—Spherical projections, including the construction of maps. (3).—Axometric projection. (4).—Shades and shadows. (5).—Mathematical perspective. Perspective of shades and shadows.

Surveying

This course is designed to qualify the Student for admission to the practice of Provincial and Dominion Land Surveying. It also affords a practical and theoretical training in field engineering.

SECOND YEAR.—Chain Surveying, Angular Surveying. The use and adjustment of the Transit, Theodolite, Level (Dumpy, Y, and other forms), Sextant, Aneroid Barometer, Plane-table and other field instruments. Contour Surveying, Underground Surveying. Plotting. Practical operations in the field and Class-room. Calculating areas.

THIRD YEAR.—Topography, Review of Instruments, Methods of Setting out Work and Curves. Geodesic Levelling, Indirect and Barometic Levelling, Hydrographic Surveying, Geodetic Surveying. The Astronomical Transit and Determination of time. Practical operations in the field, class-room and observatory.

NOTE.—The field work is carried out under the personal supervision of the Professor, and is as follows :—(*a*) a chain survey. (*b*) an angular survey, (*c*) a contour survey, (*d*) the location of a line of road, including preliminary surveys, ranging curves, levelling and settting out the work, (*e*) a hydrographic survey. Each student is required to make field notes, and from these to plot all plans and sections required in connection with the above.

At the close of the sessional examinations there is also an optional course for the 3rd year in astronomical observations and triangulations. The former includes latitude, longitude (by lunar culminations), azimuth and time.

FREEHAND AND MODEL DRAWING.

FIRST YEAR.—Instruction in Freehand and Model Drawing will be given by Mr. A. T. Taylor, F.R.I.B.A.

Students in Arts may attend the classes in Freehand Drawing on payment of a fee of $1 per term.

V. CHEMISTRY AND ASSAYING.

Professor:—B. J. HARRINGTON, B.A., PH.D. (Greenshields Professor of Chemistry and Mineralogy.)

Assistant:—M. L. HERSEY.

A course of Lectures, illustrated by experiments, is given to all Students of the First Year in Applied Science on the Laws of Chemical Combination, Chemical Formulæ and Equations, the preparation and properties of the more important non-metallic and metallic Elements and many of their Compounds, and on the elementary principles of Organic Chemistry. Students taking these lectures must also devote one afternoon a week during the first term, and two afternoons a week during the second term, to practical work in the laboratory.

In the Second and Third Years of the Mining Course, instruction will be given in Qualitative and Quantitative Analysis, and Chemistry Students of these years will attend a Course of lectures on either Organic Chemistry or the Chemistry of the metals. In the Fourth Year, Mining Students will devote themselves chiefly to Mineral Analysis and Assaying, while Practical Chemistry Students may substitute Organic Analysis and the preparation of Organic Compounds for these subjects.

The laboratory is open daily (Saturdays excepted) from 9 a.m. to 1 p.m., and from 2 to 5 p.m.

VI. GEOLOGY AND MINERALOGY.

Professor:—SIR WILLIAM DAWSON, LL.D., F.R.S. (Logan Professor of Geology).

Professor:—B. J. HARRINGTON, B.A., PH.D., F.G.S.

Lecturer.—FRANK D. ADAMS, M.A.Sc.

SECOND YEAR.—A preliminary Course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy (Ordinary and Honour), Petrography, Physical and Chronological Geology and Palæontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR.—Special Studies in Mineralogy and Petrography; Advanced Course in General Geology and Palæontology; Geology of Canada; Practical Geology and Field-work.

For further details see Announcement of the Faculty of Arts.

NOTE. Students of the Mining and Chemistry courses take the Honour Mineralogy of the Third Year. Mining Students take the whole (Honour) course of the Fourth year. Chemistry Students take, in addition to the ordinary course in Geology, only the Honour Mineralogy of the Fourth Year.

VII. BOTANY.

Professor:—D. P. PENHALLOW, B.Sc.

Course.— General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology.

VIII. MATHEMATICS AND MATHEMATICAL PHYSICS.

Professor:—G. H. CHANDLER, M.A.

The lectures in this course are specially designed to meet the requirements of Students of Applied Science; those in Mechanics being introductory to Applied Mechanics. The subjects are as follows:—

FIRST YEAR:—(1) Euclid, six books. (2) Loci, Transversals, &c. (3) Algebra, to Progession. (4) Plane Trigonometry and the use of Mathematical Tables. (5) Elements of Solid Geometry. (6) Geometrical Conic Sections.

SECOND YEAR.—(1) Algebra continued. (2) Analytical Geometry. (3) Differential and Integral Calculus. (4) Mechanics.

THIRD YEAR.—(1) Mechanics continued. (2) Spherical Trigonometry. (3) Spherical and Practical Astronomy. (4) Revision and continuation of Analytical Geometry and Calculus, with applications to Mechanics, &c.

FOURTH YEAR.—Revision of Analytical Geometry and Calculus.

IX. EXPERIMENTAL PHYSICS.

Professor:—ALEXANDER JOHNSON, LL.D. (Peter Redpath Professor of Natural Philosophy.)

Students in this Faculty are required to take the course in Experimental Physics provided by the Faculty of Arts.

The subjects for the Session 1890-91 are Electricity, Magnetism and Sound.

X. ENGLISH LANGUAGE AND LITERATURE.

Professor:—C. E. MOYSE, B.A. (Molson Professor of English Language and Literature.)

Lecturer.—PAUL T. LAFLEUR, M.A.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

THIRD YEAR.—A special course on English Composition.

XI. FRENCH OR GERMAN.

French.—Professor.—P. J. DAREY, LL.D., B.C.L.

German.—Lecturer.—P. TOEWS, M.A.

Students of this Faculty are required to take the course in one of these languages provided by the Faculty of Arts.

XII. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments, and on the general facts of Meteorology.

§ X. TEXT BOOKS.

Applied Mechanics:—Bovey, Cotterill, *Rankine, *Collignon, *Weisbach, Reuleaux.

Hydraulics:—Merriman, *Weisbach.

Machinery, etc.:—Goodeve (new edition), *Willis, Rankine, Kennedy, *Knight, Rose, *Shelley, *Fairbairn, Unwin.

Heat and Heat Engines:—Holmes, *Jamieson, *Maxwell, Tait, Wilson, Rankine, Rigg, Marks.

Moulding and Founding:—Overman.

Materials:—Notes on Building Construction, *Gilmore, Thurston.

Descriptive Geometry:—Millar's Descriptive Geometry.

Surveying:—Gillespie's Land Surveying (new edition). Johnson's Surveying.

Geology:—Dana's Geology; Dawson's Handbook of Zoology and Lecture Notes on Geology, *Nicholson's Palæontology, *Geological Survey Reports, *Dawson's Acadian Geology.

Mineralogy:—Dana's Manual, *Dana's Descriptive Mineralogy.

Blowpipe Analysis:—Brush's Determinative Mineralogy and Blowpipe.

Botany:—Gray and Bessey.

Chemistry:—Remsen's Introduction to the Study of Chemistry (First Year), Remsen's Compounds of Carbon, Thorpe & Muir's Qualitative Chemical Analysis. Fresenius' Manuals of Qualitative and Quantitative Analysis, *Watt's Dictionary of Chemistry, *Roscoe & Schorlemmer's Treatise on Chemistry.

Metallurgy:—Greenwood's Manual of Metallurgy.

Assaying:—Rickett's Notes on Assaying, Chapman's Assay Notes.

Mathematics:—Todhunter's Euclid, Colenso's Algebra (Part 1), Hamblin Smith's Trigonometry, Wilson's Solid Geometry and Conic Sections, Briggs's Analytic Geometry, Peck's Calculus, Goodeve's Principles of Mechanics, Chambers' Practical Mathematics, Chambers' Mathematical Tables.

* *Books of Reference.*

TABLE OF LECTURES.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	9		Drawing.	Mathematics.	Mathematics.	Mathematics.
	10	Mathematics.	Mathematics.			
	11	English.	French.	French.	French.	English.
	12	Chemistry.	German.	English.	German.	Chemistry.
	2		Pract. Chem. (2nd. Term).	* Freehand Drawing.		Pract. Chem.
	3		* Do	Do		Do.
Second Year.	9	French.	Drawing.	French.		French.
	10	Mechanism.	German.	Mechanism.	{ Theor. Chem. { Mathematics.	German.
	11	Mathematics.	Zoology.	Mathematics. Botany. †	Zoology.	Mathematics.
	12	Botany. †	Exp. Physics.		Exp. Physics.	English.
	2	Pract. Chem. Drawing.	Surveying.	Pract. Chem. ‡ Drawing.	Drawing. Pract. Chem.	Surveying.
	3	Drawing.	Drawing.	‡ Drawing.	Do	Drawing.
	4	Mech. Work Drawing.	Do	Do	Do	Do.
Third Year.	9	Mathematics.	Mathematics.	Machinery. Geology.	Theory of Structures.	Mineralgy .
	10	Geology.	French.	Mathematics.	French. Theor. Chem.	Geology.
	11	Machines.	English.		Theory of Structures. (Advanced).	
	12	Theory of Structures.	Exp. Physics.		Exp. Physics.	
	2	Surveying. Pract. Chem.	Theory of Structures. Pract. Chem.	{ Blowpipe. { Analysis.	Pract. Chem. Surveying.	Pract. Chem. Drawing.
	3	Drawing.	Drawing.		Drawing.	Drawing.
	4	Mech. Work. Drawing.	Drawing. Mining.		Drawing.	Do.

* The Freehand Drawing Class is also held from 9 to 11 on Saturdays.

† For Practical Chemistry Students. ‡ For Mining Students.

TABLE OF LECTURES—(*Continued.*)

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FOURTH YEAR.	9	Mathematics.	Designing. Mathematics.	Designing.	Theory of Structures.	Designing.
	10	Theory of Structures.	Designing.	Do	Machines.	Designing.
	11	Machines. Geology.**	Do		Theory of Structures.	Geology.**
	12	Theory of Structures.	Do	Geology. **	Theory of Structures. (Advanced)	
	2	Pract. Chem. Assaying. Designing.	Theory of Structures. Pract. Chem.	Pract. Chem.	Pract. Chem. Assaying. Designing	Hydraulics. (*a*) Steam. (*a*)
	3	Do	Hydraulics. (*a*) Steam. (*a*)	Do	Do	
	4	Do	Do	Do	Do	

** For Mining and Chemistry Students. (*a*) Steam during first term; Hydraulics during Second year.

Field work for Students of the Second year on Mondays, Tuesdays, Wednesdays, Thursdays and Fridays; for Students of the Third year on Mondays, Wednesdays, Thursdays and Fridays during the months of September and October.

SPECIAL ANNOUNCEMENT.

Large Engineering Laboratories, fully equipped with apparatus and extensive workshops, are now in course of erection, a full description of which will be given in a separate announcement, which may be obtained from the Secretary of the University. In consequence of the greatly increased facilities for the prosecution of a thorough education in all departments of Applied Science, the fees of all students entering in September, 1890, or afterwards, will be $100 per annum, this amount to include matriculation, tuition, gymnasium, library and graduation fees, and also the use of the machinery and other apparatus as well as the cost of material in the workshops and engineering laboratories. Students who are already in attendance may obtain all privileges connected with the new buildings, etc., on payment of special fees, which will be announced in due course.

Faculty of Medicine.

THE PRINCIPAL (*ex-officio*).

Professors:

WRIGHT,	ROSS,	WILKINS,
MACCALLUM,	RODDICK,	PENHALLOW,
CRAIK,	GARDNER,	MACDONNELL,
FENWICK,	SHEPHERD,	MILLS,
GIRDWOOD,	BULLER,	CAMERON,
	STEWART.	

Dean.—R. CRAIK, M.D.
Vice-Dean.—GEORGE ROSS, M.D.
Registrar.—J. STEWART, M.D.
Librarian.—F. J. SHEPHERD, M.D.

The Fifty-Eighth Session of this Faculty will be opened on Wednesday, October 1st, 1890, by an introductory lecture at 3 p.m. The regular lectures will begin on October 2nd, at the hours specified in the time-table, and will be continued for six months.

The new building of the Medical Faculty, which was opened in the year 1885, is one of the most complete structures of its kind on this continent or elsewhere. It has been found admirably adapted for the fulfilment of the great aim of the Faculty—to make the teaching of the primary branches as practical and as thorough as possible. The facilities now possessed by the Faculty for the above purpose are equal to those of the most advanced European medical schools.

In addition to the laboratories and dissecting room, there are two large lecture rooms, each capable of comfortably seating 300 students, and one small demonstration room for classes of 50 and under. The space allotted to the library and museum has been largely increased.

The Dissecting Room, which is situated on the second floor, is 76 feet in length and 31 feet in breadth. It is furnished with twenty tables, and is well lighted for work during the day and night. In procuring appliances for the comfort and convenience of the students, no reasonable expense has been spared.

The Physiological Laboratory, which is situated on the ground floor, is supplied with the most modern apparatus for the practical teaching of this most important branch of the medical curriculum. It contains amongst other valuable instruments,—kymographs, various manometers, etc., for demonstrating blood pressure; myographs, rheocords, moist chambers, etc., and various electrical appliances for demonstrating experiments in connection with nerve and muscle; special apparatus for illustrating various points in respiration; apparatus specially suitable for demonstrating the processes of digestion, as well as the chemical composition and nature of the secretions, and the chief constituents of the tissues and nutritive fluids. The laboratory is arranged in such a way as to permit of students assisting at and taking part in these demonstrations. During the past session important additions have been made to the physiological laboratory.

The Histological Laboratory is a large, well-lighted room on the second floor. It is so arranged that over eighty students can be present at the microscopical demonstrations. From the large number of microscopes employed, students will have special facilities in studying and making themselves thoroughly acquainted with the specimens that are the subjects of demonstration.

The Pharmacological Laboratory is a large room situated on the ground floor, and is now furnished with the necessary appliances for the practical teaching of pharmacy.

The Chemical Laboratory is large, lofty, and well lighted, and can accommodate comfortably 76 men at one time. Each student, when entering on this course, has a numbered table in the laboratory assigned to him for his use during the session. Each table has its own gas and water fixtures, and is provided with shelves for its corresponding set of reagent-bottles, as well as a drawer and locker containing a modern set of chemical apparatus especially adapted for the work. This apparatus is provided by the Professor of Chemistry, and supplied to each student without extra charge.

The student is only required to pay for apparatus broken or destroyed.

In the Pathological Laboratory accommodation will be provided for students or practitioners who desire to carry on private pathological research.

The recent additions made to the laboratory include a suite of rooms exclusively devoted to the study and culture of Bacteria, furnished with a complete outfit of the best modern apparatus for this purpose, including sterilizer, thermostat, etc., etc.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and Licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemption in certain subjects as are granted to all colonial degrees.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec.

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§ I. MATRICULATION.

It is very important that intending Students should note the following facts and regulations:—

(1.) If residents of Ontario, and desirous of obtaining the license of that Province, they must conform to the regulations regarding the Preliminary Examination, and register before beginning their medical studies.

(2) If residents of the Province of Quebec, and desirous of obtaining the license of that Province, they must pass the Matriculation Examination of the Quebec Medical Board before beginning their medical studies.

In the event of a resident in the Province of Quebec producing a Certificate of Matriculation from any of the other Provinces of the Dominion, he will be required to make a declaration that he had not obtained it with the object of avoiding the examination of the Quebec Medical Board.

(3) Residents of the Maritime Provinces, Manitoba or British Columbia may either pass the Preliminary Examination of their respective Medical Boards or the Matriculation Examination of this University.

(A).—UNIVERSITY MATRICULATION EXAMINATION.

The Preliminary Examination in General Education of the following Bodies is accepted by the University in lieu of its own Matriculation Examination :

1. The College of Physicians and Surgeons, Ontario.
2. The College of Physicians and Surgeons, Quebec.
3. The New Brunswick Medical Board.
4. The Nova Scotia Medical Board.
5. The Manitoba Medical College.

Graduates and Matriculates in Arts of all recognized Universities are exempt from examination. Any student who is unable to present proof of having passed any one of the above, or other equally satisfactory examination, will be required to undergo the matriculation examination either in Arts or Medicine of this University. These examinations are as follows :

(1) *The Matriculation Examination in Arts* is held twice yearly on the 1st of June and following days, and on the 17th of September and following days.

Papers for the June examination can be sent to local centres on application to the secretary of the University, the September examinations are held in Montreal only.

The subjects for examination are Classics, Mathematics and English.

Greek.—Xenophon, Anabasis, Book I. ; Greek Grammar.

Latin.—Cæsar, Bell. Gall., Book I. ; and Virgil, Æneid, Book I., lines 1-300 ; Latin Grammar.

Mathematics.—Arithmetic ; Algebra, to Simple Equations (inclusive), Euclid's Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar *including* Analysis. A paper on the leading events of English History. Essay on a subject to be given at the time of the examination.

An equivalent amount of other books or other authors in Latin or Greek than those named may be accepted in the September examination, on application through the Professor of Classics.

(2) *The Medical Matriculation Examination* is the same as that required by the Medical Council of Great Britain.

This Examination will be held on the last Friday and Saturday in March, and the third Friday and Saturday in September of each year. Application may be made to Dr. Howe, the Examiner, till the evening of the previous day. The requirements of the Standard for Matriculation are:—(1) English Language, including Grammar and Composition. (2) English History. (3) Modern Geography. (4) Latin, including Translation from the original and Grammar. (5) Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including simple Equations; (*c*) Geometry, including the first two books of Euclid or the subjects thereof. (6) Elementary Mechanics of Solids and Fluids, comprising the elements of Statics, Dynamics and Hydrostatics. (7) One of the following optional subjects:—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern language, (*f*) Logic, (*g*) Botany, (*h*) Elementary Chemistry.

Text Books.—Latin, Cicero, in Catilinam II.; or Virgil, Æneid, Bk. I.

Greek.—Xenophon, Anabasis, Bk. I., or Homer's Iliad, Bk. IV.

French.—Voltaire's Charles XII., Two Books.

Natural Philosophy.—Ganot's Physics, the Chapters on Statics, Dynamics, Hydrostatics and Heat.

Botany.—Gray's "How Plants Grow."

Elementary Chemistry.—Storer and Elliot's Manual.

(B).—MATRICULATION EXAMINATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF QUEBEC.

Graduates in arts of any British or Canadian University are exempted from this examination on presentation of their Diplomas.

Latin.—Cæsar's Commentaries, Bks. I., II., III., IV.—Virgil's Æneid, Bks. I. and II.—The Odes of Horace, Bk. III.

English.—A play of Shakespeare, viz., "Richard III.," for 1890. "Henry IV.," Part I. for 1891; "Henry IV.," Pt. II. for 1892.

French—Fénelon's "Aventures de Télémaque"—Translations into French of easy English extracts.

Belles Lettres and Rhetoric.—Principles of the subject. History of the Literature of the age of Pericles in Greece, of Augustus in Rome, the 17th and 18th centuries of England and France.

History.—Outlines of the History of Greece and Rome, with particular knowledge of England, France and Canada.

GEOGRAPHY.—A general view, with particular knowledge of England, France and North America.

ARITHMETIC.—Must include Vulgar and Decimal Fractions, Simple and Compound Proportion, Interest and Percentages, and Square Root.

ALGEBRA.—Must include Fractions and Simultaneous Equations of the First Degree.

GEOMETRY.—Euclid, Books, I., II., III., and VI., or the portion of Plane Geometry covered by those Books. Also the measurement of the lines, surfaces and volumes of regular geometrical figures.

Optional Subjects.

GREEK.—Xenophon's Anabasis, Book I.—Homer's Iliad, Book I., with Greek Grammar.

PHYSICS.—Outlines of the subject, as in Ganot's Physics, translated by Atkinson.

PHILOSOPHY.—Elements of Logic and of Moral Philosophy, as in Jevon's Logic and Calderwood's Handbook of Moral Philosophy.

The Examinations will be held upon the 18th of September, 1890, at Quebec, and on the 7th of May, 1890, at Montreal. Applications to be made to Dr. F. W. Campbell, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule giving text-books and percentage of marks to be obtained.

Examination Fee, ten dollars. Should the candidate be unsuccessful, one half of the fee will be returned.

Of the four years' study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the fourth year.

(C.)—MATRICULATION EXAMINATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.

Every one desirous of being registered as a Matriculated Medical Student in the Register of this College, except as hereinafter provided, must present to the Registrar, Dr. Pyne, Toronto, the official certificate of having passed the 2nd class Teachers' examination, with Latin option; whereupon he shall be entitled to be so registered, upon the payment of twenty dollars and giving proof of his identity.

Graduates in Arts, or Students having matriculated in Arts in any University in Her Majesty's Dominions, are not required to pass the Matriculation Examination, but may register their names with the Registrar of the College, upon giving satisfactory evidence of their qualifications, and upon paying the fee of twenty dollars.

§ II.—ENREGISTRATION.

The following are the University Regulations :—

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty.

The said Register shall be closed on the last day of October in each year. Fees are payable to the Registrar, and must be paid in advance at the time of enregistration.

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§ III.—COURSES OF LECTURES.

ANATOMY.

PROFESSOR, FRANCIS J. SHEPHERD.

Anatomy is taught in the most practical manner possible, and its relation to Medicine and Surgery fully considered. The lectures are illustrated by the fresh subject, moist and dry preparations, sections, models and plates, and drawings on the blackboard.

Special attention is devoted to Practical Anatomy, the teaching being similar to that of the best European schools. The Dissecting Room is open from 8 a.m. to 10 p.m., the work being conducted under the constant supervision of the Professor and his staff of Demonstrators. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Every Student must be examined *at least* three times on each part dissected, and if the examinations are satisfactory a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Abundance of material provided.

CHEMISTRY.

PROFESSOR, GILBERT P. GIRDWOOD.

LECTURER, R. F. RUTTAN.

Inorganic Chemistry is fully treated; a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to the members of the class to repeat experiments performed during the course, under the superintendence of the Professor or Lecturer.

PRACTICAL CHEMISTRY.

PROFESSOR, GILBERT P. GIRDWOOD.

LECTURER, R. F. RUTTAN.

The course in practical chemistry includes two hours' laboratory work three times a week for three months. The Students are instructed individually in

chemical manipulations, blow-pipe analysis, and qualitative determination of the salts, acids, etc., they will require to use in practice. They are required before finishing their course to be familiar with the principles of practical Forensic and Sanitary Chemistry. Special attention is directed to instructing the Student in making accurate notes of his experiments and his conclusions. These notes are examined daily and criticised.

PHYSIOLOGY.

PROFESSOR, T. WESLEY MILLS.

The purpose of this Course is to make Students thoroughly acquainted, as far as time permits, with modern Physiology: its methods, its deductions, and the basis on which the latter rest. Accordingly a full course of lectures is given, in which both the Experimental and Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subject is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the Student.

Laboratory work for Senior Students.

(1) During the first part of the Session there will be a course on Physiological Chemistry, in which the Student will, under direction, inve tigate food stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of such experiments as are unsuitable for demonstration to a large class in the lecture room, and such as require the use of elaborate methods, apparatus, etc. There will be no extra fee for this part of the course.

HISTOLOGY.

PROFESSOR, GEO. WILKINS.

This will consist of a course of ten lectures and twenty-five weekly demonstrations with the Microscope. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

PHARMACOLOGY AND THERAPEUTICS.

PROFESSOR, JAMES STEWART.

The course on this subject comprises:

I. A de-cription of the Pharmacology and Therapeutics of the more important medicinal agents.

II. The delivery of a weekly lecture ("Clinical Therapeutics") in the theatre of the General Hospital, on some case or groups of cases well adapted for illus-

trating important points in both general and special Therapeutics. The material for these lectures is abundant, being obtained from both the wards and the out-door clinics. Electro Therapeutics will also be dealt with in this part of the course.

III. The attendance during the summer session of a course on Practical Materia Medica.

MEDICINE.

PROFESSOR, GEORGE ROSS.

While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, no opportunity is lost of illustrating and explaining the *general* laws of disease. With the exception of certain affections seldom or never observed in this country, all the important internal diseases of the body, except those peculiar to Women and Children, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates, illustrative of the Histological and Anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

CLINICAL MEDICINE.

PROFESSOR, R. L. MACDONNELL.

Attendance is given in the Medical Wards of the Montreal General Hospital on three days of every week with the 3rd year students, and three days with those of the 4th year. Accurate reports of all cases are kept by duly appointed clinical clerks, and are systematically read before the class. Instruction is given at the bedside, and every pupil is required to take part in the physical examination of patients. The mode of conducting investigations, the use of the micro-scope, the value of the thermometer and ophthalmoscope, etc., in medical diagnosis, are all explained and illustrated. Senior Students are called upon in rotation to examine new cases before the class, and to be examined thereon as to their general knowledge. In addition, one weekly Clinical Lecture is delivered, bearing upon some case or cases of importance which may happen to be under observation at the time. Special attention is directed to Medical Anatomy, and candidates for the degree will be examined thereon.

SURGERY.

PROFESSOR, THOMAS G. RODDICK.

The first part of this course consists of Surgical Pathology, illustrated by a large collection of preparations from the College Museum, also specimens as they are obtained from cases under observation at the Hospital, and contributed to that collection by the Hospital pathologist, and from private sources. The second part of the course is devoted to the practice of Surgery, in which attention is drawn

to cases which have been observed by the class during the previous summer session. The various surgical appliances are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery form a special department of this course, and Quain's and Maclise's plates are used in illustration.

CLINICAL SURGERY.

PROFESSOR RODDICK.

LECTURER, JAMES BELL.

This course is eminently practical, consisting of bedside instruction and lectures delivered weekly, illustrative of surgical cases actually present in the wards of the General Hospital. The class is separated into junior and senior divisions, which are taken charge of by the Professor on alternate days, when the reports of the Clinical clerks are read and criticised, and fresh cases are examined by the senior students. The surgical dressings are, as much as possible, reserved for these occasions, so as to give all present an opportunity of participating in the application of splints to fractures, dressing of wounds, minor operations, etc. Major operations are performed in the theatre attached to the Hospital, which is so constructed that the most distant can obtain a fair view of the operations. All the recently invented appliances for the treatment of surgical disease have been introduced into the Hospital.

MIDWIFERY.

PROFESSOR, J. C. CAMERON.

This course will embrace: 1. Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete set of models, illustrating deformities of the pelvis, wax preparations, bronze mechanical pelvis, etc. 2. Bedside instruction in the Montreal Maternity, including the management and after-treatment of cases. 3. A complete course on obstetric operations with the phantom and preserved fœtuses. 4. The Diseases of Infancy. 5. A course of individual clinical instruction at the Montreal Maternity.

Particular attention is given to clinical instruction, and a clinical examination in Midwifery similar to that held in Medicine and Surgery now forms part of the final examination.

GYNÆCOLOGY.

PROFESSOR, WM. GARDNER.

The course on this subject will comprise two lectures a week throughout the session. The anatomy and physiology of the parts concerned will be first discussed. Then the various methods of examination will be fully described, the necessary instruments exhibited, and their uses explained. After this, the diseases peculiar to the sex will be considered as fully as time will permit, in the following order:—Disorders of Menstruation; Leucorrhœa, its causes and treatment;

Pelvic Cellulitis and Peritonitis ; Lacerations of the Cervix Uteri and Perineum ; Urinary and Fæcal Fistulæ ; Inflammations of the Uterus ; Displacements of the Uterus ; Tumors of the Uterus ; Diseases of the Ovaries.

The lectures will be illustrated as fully as possible by drawings and morbid specimens. The Gynæcological Clinic of the General Hospital furnishes the Professor with ample material to illustrate the subjects considered in the didactic lectures.

Particular attention is given to clinical instruction, and a clinical examination in gynæcology similar to that held in Medicine and Surgery now forms part of the final examination.

MEDICAL JURISPRUDENCE.

PROFESSOR, GEO. WILKINS.

This course includes Insanity, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopic tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shewn by Zeiss' Microspectroscope, so well adapted for shewing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the class.

OPHTHALMOLOGY AND OTOLOGY.

PROFESSOR, FRANK BULLER.

Will include a course of lectures on disease of the Eye and the Ear, both Didactic and Clinical. In the former, the general principles of diagnosis and treatment will be dealt with ; in the latter, cases illustrative of the typical form of ordinary diseases of these organs will be exhibited and explained to the class, and afterward placed under the special care of gentlemen who may show themselves competent to take charge of them. A course of Operations on the cadaver will be open to such students as may wish to avail themselves of the same.

HYGIENE.

PROFESSOR, ROBERT CRAIK.

Comprises lectures on Drinking Water and Public Water Supplies ; conditions of Soil and Water as affecting health, including Drainage and the various methods

for the removal of Excreta; the Atmosphere, including Heating and Ventilation; Individual Hygiene, comprising the subjects of Food and Drink; Physical Exercise and Bathing; discussion of the respective merits of the various forms of each, precautions, contra-indications, etc., Village Sanitary Associations; Mutual Protective Sanitary Associations for cities.*

BOTANY.

PROFESSOR, D. P. PENHALLOW.

The course in Botany includes General Morphology, Histology, Physiology and Classification. It is designed to give special prominence to Physiology, which will be made comparative whenever practicable. The course is illustrated by the microscope and gas microscope, and by the collection, models and apparatus in the Peter Redpath Museum.

ZOOLOGY.

PROFESSOR, SIR WILLIAM DAWSON.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples, and by the collections in the Peter Redpath Museum. It forms a suitable preparation for collecting in any department of Canadian Zoology and Palæontology, and an introduction to Comparative Physiology. It may be taken instead of Botany, or along with it, without any additional fee.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum, and to the Museum of the Natural History Society of Montreal.

PATHOLOGY.

DEMONSTRATOR, W. G. JOHNSTON.

This Course comprises :—

1. Twenty-five lectures on General Pathology to Students of the third year.

2. Weekly Pathological Demonstrations to Students of the third year. The gross and microscopic appearances of specimens collected during the week are demonstrated to the final classes. In addition, special demonstrations in Pathological Histology are given throughout the session.

3. Instruction in Post-Mortems. The Autopsy Room of the General Hospital is in charge of the Demonstrator. The post-mortems are performed by the

* Students may attend the Lectures on Sanitation in the Faculty of Applied Science:—Fee $6.

Exemptions from Botany in the Matriculation, for Arts Students, do not entitle Students to exemptions in the First Year.

students in rotation under his direction, and systematic demonstrations of post-mortem methods, including those to be followed in Medico-Legal cases, will also be given.

PRACTICAL MICROSCOPY.

This is an entirely *Optional* Course, and will be conducted by Prof. Wilkins. It is intended e pecially for teaching the *technique* of Microscopy. Students will be shown how to examine blood, etc., also to cut, stain and mount specimens. Everything except over-glasses and cabinet cases provided. Fee $8.00.

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§ IV.—QUALIFICATIONS FOR THE DEGREE.

The following are Extracts from the Regulations respecting the qualifications of Candidates for the Degree in Medicine :—

1st. No one entering after October 1st, 1884, will be admitted to the Degree of Dector of Medicine and Master of Surgery, who shall not have attended Lectures for a period of at least four six months' sessions and one three months' summer session* in this University, or some other University, College or School of Medicine approved of by this University.

2nd. Candidates for final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz. :—

Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated, may be presented and accepted.

Anatomy. Practical Anatomy. Physiology. Chemistry. Materia Medica and Therapeutics. Principles and Practice of Surgery. Midwifery and D seases of Women and Children. Theory and Practice of Medicine. Clinical Medicine. Clinical Surgery.	Of which two courses will be required of Six Months' duration.
Medical Jurisprudence.	Of which One Course of Six Months, or Two Courses of Three Months, will be required.
Practical Chemistry. Botany or Zoology. Hygiene.	Of which One Course will be required of Three Months' duration.
Histology. General Pathology.	Ten Lectures and Twenty-five Demonstrations. Twenty-five Lectures.

*To be taken after 3rd Winter Session.

3rd. The candidate must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital, or that of some other Hospital approved of by this University, and of having compounded medicines for six months.

4th. He must also give proof of having assisted at six autopsies.

5th. He must also give proof by ticket of having attended for at least six months the practice of the University or other Lying-in-Hospital approved of by this University, and of having attended at least six cases of labor.

6th. No one will be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and one full course of all the branches included in its curriculum.

7th. Courses of less length than the above will only be received for the time over which they have extended.

8th. Students, except by special permission of the Faculty, must pursue the subjects of Anatomy, Chemistry, Histology and Botany in their first session, and are advised to take Physiology in addition.

9th. Candidates who fail to present themselves for to pass in any of the subjects of the first two years will be granted a supplemental examination at the beginning of the following session.

10th. Supplementary examinations will not be granted except by special permission of the Faculty, and on written application stating reasons, and accompanied by a fee of $2 for each class.

11th. No candidate will be permitted to proceed with the work of the final year, until he has passed all the subjects comprised in the Primary Examination.

12th. Candidates who fail to pass in a subject of which two courses are required may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon.

A course in Practical Anatomy will be accepted as equivalent to a third course of lectures in General and Descriptive Anatomy.

13th. The requirements for the summer session, when as at present taken after the third winter session, shall be :—

(*a*) Daily Hospital attendance;

(*b*) Maternity attendance ; and

(*c*) Any two weekly clinics, in addition to the clinics in General Medicine and Surgery.

14th. Every Candidate for the Degree must, on or before the first day of March, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Registrar of the Faculty the following Certificate :—

MONTREAL, ——— 18—

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years, or (if the case be otherwise) that I shall have attained the age of twenty-one years before the next graduation day, and that I am not (or shall not be at that time) under articles as a pupil or apprentice to any Physician, Surgeon, or Apothecary.

(Signed) A.B.

15th. The trials to be undergone by the Candidate shall be such as are referred to under Section V.

16th. The following Oath or affirmation will be exacted from the Candidate before receiving his degree :—

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A———B———, Doctoratus in Arte Medica, titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo ;—me in omnibus grati animi officiis erga hanc Universitatem, ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

17th. The fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination.

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§ V.—EXAMINATIONS.

Weekly examinations are held to test the progress of the Student ; and in addition two or three written examinations are given throughout the Session.

The examinations at the close of each Session are arranged as follows :—

FIRST YEAR.

Pass Examination in BOTANY, HISTOLOGY and VISCERAL ANATOMY.

Sessional Examination in ANATOMY, CHEMISTRY, and PHYSIOLOGY.

A due proportion of marks will be allowed for the Sessional Examination in each subject, which marks shall be reckoned in the ranking of the candidate after the examination of the following year.

SECOND YEAR.

Pass Examination in ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY, PHYSIOLOGY and HISTOLOGY.

Sessional Examination in PHARMACOLOGY and THERAPEUTICS.

One hundred marks will be allowed for the Sessional Examination, which marks shall be reckoned in the ranking of the candidate after the examination of the following year.

THIRD YEAR.

Pass Examination in PHARMACOLOGY and THERAPEUTICS, MEDICAL JURISPRUDENCE, HYGIENE* and PATHOLOGY.

* The examinations in Hygiene are held at the close of the summer session.

FOURTH YEAR.

Pass Examination in MEDICINE, SURGERY, OBSTETRICS, CLINICAL MEDICINE, CLINICAL SURGERY and PRACTICAL PATHOLOGY.

By means of the above arrangement a certain definite amount of work must be accomplished in each year, and an equitable division is made between the Primary and Final branches.

With regard to the Primary Examination at the end of the second year, it remains optional with the Student whether he passes in all the branches or leaves two for the third year. In any case, Chemistry and Anatomy must be taken at the close of the second year, except it be otherwise agreed to by the Faculty.

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§ VI.—MEDAL AND PRIZES.

1st. The Holmes Gold Medal, awarded to the Student of the graduating class who receives the highest aggregate number of marks for the best examinations, written and oral, in both Primary and Final branches.

The Student who gains the Holmes Medal has the option of exchanging it for a Bronze Medal, and the money equivalent of the Gold Medal.

2nd. A Prize in Books awarded for the best examination, written and oral, in the Final branches. The gold medallist is not permitted to compete for this prize.

3rd. A Prize in Books awarded for the best examination, written and oral, in the Primary branches.

4th. The Sutherland Gold Medal, awarded for the best examina-

tion in Theoretical and Practical Chemistry, together with creditable examination in the Primary branches.

5th. A Prize in Books for the best examination in Practical Anatomy.

6th. Prizes in Botany.

A Prize in Books for the best examination.

7th. The Clemesha Prize in Clinical Therapeutics, Books to the value of $25.00.

§ VII.—FEES.

The total collegiate fees for all students entering on and after the first of October, 1890, will be four hundred dollars, to be paid in four annual instalments of one hundred dollars each. The above sum represents the tuition for four winter and one summer sessions, and if the student elects to attend the two other summer sessions of his course, he can do so without further payment. (For Fees of graduation, see § IV, clause 16, supra.)

All fees are payable in advance, to the Registrar, and except by permission of the Faculty will not be received later than 1st November.

It is suggested to parents or guardians of students that the fees be transmitted direct by cheque or P. O. Order, to the Registrar, who will furnish official receipts.

§ VIII.—TEXT BOOKS.

(*Prices current in Montreal.*)

Anatomy.—Gray, Wilson, Quain (Eng. Ed.)

Practical Anatomy. - Heath's Dissector, Holden's Dissector, and Landmark's, Ellis' Demonstrations.

Physics.—Balfour Stewart.

Inorganic Chemistry.—Millar, Wurtz's Elementary Chemistry.

Organic Chemistry.—Armstrong.

Practical Chemistry.—Odling, Galloway, Fresenius.

Pharmacology and Therapeutics.—Wood, Lauder Brunton, Whitla, and Bruce.

PHYSIOLOGY.—Huxley's *Elementary Lessons*, Foster, Prof. Mills Text-Book of Physiology and Outlines of Lectures.

PATHOLOGY.—Delafield and Prudden.

HISTOLOGY.—Klein's Elements, Schafer's Essentials of Histology.

SURGERY.—Holme's Surgery (Eng. Ed.), Erichsen, Druitt, Bryant, Treves.

PRACTICE OF MEDICINE.—Flint, Roberts, Bristowe, DaCosta, Fagge, Quain's Dictionary.

FOR REFERENCE.—Pepper's System of Medicine.

CLINICAL MEDICINE.—Finlayson's Clinical Manual, Fenwick on Medical Diagnosis, Warner on Medical Case Taking.

MEDICAL JURISPRUDENCE.—Husband, Guy and Ferrier, Reese.

MIDWIFERY.—Lusk, Galabin.

DISEASES OF CHILDREN.—Smith, Goodhart and Starr.

GYNÆCOLOGY.—Edis, Goodell's Lessons, Hart and Barbour's Manual, Thornburn Skene.

HYGIENE.—Parks, Wilson (Eng. Ed.).

BOTANY.—Gray's Text-Book of Histology and Physiology.

ZOOLOGY.—Sir William Dawson's Handbook of Canadian Zoology.

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§ IX.—MUSEUM.

For the past fifty years, the rich Pathological Material furnished by the Montreal General Hospital has been collected here. The Faculty are also greatly indebted to many medical men throughout different parts of the world for important contributions to the Museum.

During the past few years, numerous and extremely important additions have been made to the Medical Museum.

It is particularly rich in specimens of Aneurisms. In addition to containing a large number of the more common varieties of these formations, there are specimens of such rare condition as Aneurism of the Hepatic and Superior Mesenteric Arteries, Traumatic Aneurism of the Vertebral, together with several of the Cerebral and Pulmonary Arteries. The most important collection probably in existence, of hearts affected with "Malignant Endocarditis," is also found. The Faculty are indebted to Prof. Osler, late of this University, for this collection.

Obstetrical Department of the Museum.

Besides the ordinary pathological preparations, dry and moist, usually found in Museums, this departmant contains a complete set of models of deformed pelves, a series of preparations in wax, illustrating the normal relations of the pelvic organs, the development of the Uterus and its contents during pregnancy, various abnormalities, twin pregnancy, fœtal circulation, etc., a series of colored casts of frozen sections, Tarnier's artificial pelvis, Budin's bronze mechanical pelvis, models of obstetrical instruments, etc.

Additions are being constantly made, and ere long the department will possess a complete collection of models, casts, preparations and apparatus for the practical teaching and illustration of Obstetrics.

Anatomical Museum.

In addition to the already large collection of normal and abnormal osteology, comparative and human skeletons of various classes of animals, moist preparations and frozen sections, the following preparations have been recently obtained :—

(1) A series of articulated skeletons of fore and hind limbs of the various domestic animals prepared by the articulator, Mr. Bailly.

(2) Numerous moist preparations presented by the Professor and Demonstrator of Anatomy.

(3) A complete set of Steger's beautiful colored casts taken from the celebrated frozen sections of Professors His and Braune of Leipsig. These preparations have been placed in the Museum, so that they can be constantly consulted by the Students.

(4) (*a*) A complete set of Steger's brain sections.

(*b*) Set of hardened brains with the various lobes, convolutions, ganglia, etc., in different colors.

(*c*) Models of the cerebro-spinal and sympathetic nervous system.

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§ X.—LIBRARY.

The Library of the Medical Faculty now comprises upwards of thirteen thousand volumes, the largest special library connected with any medical school on this continent.

The standard text-books and works of reference, together with complete files of the leading periodicals, are on the shelves. Students may obtain books on making a deposit of $5, which is refunded on returning the volumes.

§ XI.—McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the Summer Session, and fortnightly during the Winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

A reading room has been established in connection with the Society, in which the leading English and American Medical journals are on file.

The leading daily and weekly newspapers of the Dominion are also kept on file.

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§ XII.—COST OF LIVING, &c.

This will, of course, vary with the taste and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good board may be obtained from $15 to $20 per month. A list of boarding houses is prepared annually by the Secretary of the University, and may be procured from the Janitor at the Medical College.

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§ XIII.—HOSPITALS.

Montreal General Hospital.

The Montreal General Hospital is the most extensive clinical field in the Dominion. A much larger number of in-door and out-door patients receive treatment there than in any other Canadian Hospital. Last year's report shows that 2,565 Medical and Surgical cases were treated in the wards, and the great proportion of these were acute cases, as may be gathered from the fact that the average duration of residence was only 23.6 days.

The large number of out-door patients that are treated in the Hospital—upwards of 30,000 annually—supply illustrations of most of the diseases of infants and children, of very many of the eye and skin, and of those chronic and ill-defined ailments, which, as they do not require admission to the wards of a hospital, would not otherwise come under the observation of the Student.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by the Ophthalmic Surgeon after the out-door patients have been seen, and Students are invited to attend the same, and, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

There are now special departments in the Hospital for Gynæcology and Laryngology, presided over by Specialists in these branches. Students are thus enabled to acquire special technical knowledge under skilled direction. The plan of teaching practical gynæcology for the past five years with marked success has been the limitation of the number of Students to two or three, who, in rotation, assist at the examinations, and receive instruction in the diagnosis and treatment of uterine diseases and the use of gynæcological instruments.

Recently two additional special clinics have been instituted in connection with the Out-door Department : one for diseases of children and the other for diseases of the nervous system.

Clinical Clerks in both medical and surgical wards are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted him. The holding of one of these offices is found to be of the greatest possible advantage to Students, as affording a true *practical* training for future professional life. They will be awarded on application at the end of each Session to final Students of that year, in order of their standing in the primary examination.

Dressers are also appointed to the Surgical wards and to the Out-door Department. For these appointments, application is to be made to the Professor of Clinical Surgery and to the assistant Surgeons.

The Operating Room (used also for a lecture room) is so constructed as to enable the Students to obtain a good view of the operations.

Montreal Dispensary.

ST. ANTOINE STREET.

Over 12,000 patients yearly are treated at this Institution. The cases are of great variety, comprising a large number of pulmonary affections and children's diseases. Minor operations are of daily occurrence, and excellent practice is afforded in the application of splints and bandages. The attending Physicians furnish Students with all possible facilities. The hours of attendance are from 12 to 2 daily during the winter session, and from 4 to 6 p.m. during the summer session.

The Montreal Maternity.

The Faculty have great pleasure in announcing that the Corporation of the Montreal Maternity have recently made very important additions to their building, and have still further improvements in contemplation. Students will therefore have greatly increased facilities for obtaining a practical knowledge of obstetrics. An improved Tarnier-Bûdin phantom is provided for the use of the Students, and every facility afforded for acquiring a practical knowledge of the various obstetric manipulations. The institution is under the direct supervision of the Professor of Midwifery, who devotes much time and attention to individual instruction. Students who have attended one course of lectures are furnished with cases in rotation, which they are required to report and attend till convalescence. Clinical Midwifery having been placed upon the same basis as Clinical Medicine and Surgery and a final clinical examination instituted, Students will find it very much to their advantage to pay special attention to their clinical work during the summer session. Though only six cases are required to qualify for the license of the Ontario and Quebec Medical Boards, twenty cases are demanded by the licensing bodies of Great Britain. A sufficient number of cases will be assigned to students who contemplate presenting themselves for British qualifications. Two resident Accoucheurs are appointed yearly from the graduating class to hold office for a period of six months each. By an arrangement with the authorities of the Montreal General Hospital, one of the residents acts as Clinical assistant to the Gynæcologists for a period of six months, a change enhanced the value of this appointment.

§ XIV.—STUDENTS' APPOINTMENTS.

General Hospital—Five Resident Medical Officers.
Clinical Clerk, Gynæcology.
" " Laryngology.
" " Diseases of Children.
" " Dermatology.
" " Diseases of Nervous System.
University Maternity—Two Resident Medical Officers.
Out-door Dressers.
Dressers in Eye and Ear Department.
Surgical Dressers (in-door).
Medical Clinical Clerks.
Post-mortem Clerks.
Student Demonstrators of Anatomy, 4 third-year Students.
Prosectors to Chair of Anatomy, 2.
Assistants in Practical Histology Course, 2.
Assistants in Practical Physiology Course, 4.
Assistants in Practical Chemistry, 2.

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§ XV.—RULES FOR STUDENTS.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any offence against discipline after admonition by the Professor shall be reported to the Dean of the Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

3. While in the College, Students are expected to conduct themselves in the same orderly manner as in the Class-room.

When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing for prizes and honors, suspend from Classes, or report to the Corporation for expulsion.

TIME TABLE—FIRST AND SECOND YEARS, 1890-91.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Anatomy Examination.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Physiology, 2nd Year.
10	* Practical Chemistry. 2nd Year. till 12 o'clock.	Practical Chemistry, Botany, 1st Year.	Practical Chemistry. 2nd Year.	Practical Chemistry. Botany, 1st Year.	Practical Chemistry. 2nd Year.	Practical Chemistry. Practical Physiology. Histology Demonstration.
11	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital. Zoology.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital. Zoology.	Out-Patients, Montreal Gen'l Hospital.
P.M. 2	Physiology Examination, 2nd Year.	Physiology. 2nd Year.	Physiology. 2nd Year.	Physiology, 1st Year.	Physiology, 1st and 2nd Years.	
3	Chemistry. Examination.	Chemistry.	Chemistry.	Chemistry.	Chemistry.	
4	Therapeutics Examination. Physiology, 1st Year.	Therapeutics. Physiology, 1st Year.	Therapeutics. Physiology, 1st Year.	Therapeutics.	Therapeutics. Histology Lectures, 1st Year.	
4 to 6		Practical Histology.		Practical Histology.		
A.M. 10 to 12	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.

N.B.—The Demonstrator's Hours in the Dissecting Room from 10–12 a.m., and from 8–10 p.m. * Until Christmas only.

TIME TABLE—THIRD AND FOURTH YEARS, 1890-91.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Midwifery.	Gynæcology.	Midwifery.	Gynæcology.	Midwifery.	
10	Surgery. Examination.	Surgery.	Surgery.	Surgery.	Surgery.	Morbid Anatomy. Demonstrations.
11	Practice of Medicine. Examination.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	
P.M. 1-2 p.m.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.
1		Clinic on Diseases of Children.		Clinic on Diseases of Children.		Clinic on Diseases of Children.
2					Skin Clinic.	
2.30			Neurological Clinic.			
3-30	Ophthalmic Clinic.		Ophthalmic Clinic.		Ophthalmic Clinic.	
4	Therapeutics Examination.	Therapeutics.	Therapeutics.	Therapeutics.	Therapeutics.	
4	Gynæcological Clinic.	General Pathology.	Gynæcological Clinic.	Lecture on Ophthalmology.	Gynæcological Clinic.	

Attendance to be registered at the General Hospital between 12 and 2 p.m.

Faculty of Law.

The re-organization of this Faculty under the endowment given by W. C. McDonald, Esq., is now in progress, and the usual announcement of the professional staff, course of study, etc., will be appended to this Calendar and published separately, before the opening of the session, which will take place on the 1st of October. 1890.

Faculty of Comparative Medicine and Veterinary Science.

THE PRINCIPAL (Ex-officio).

Professors:

MCEACHRAN (D.), BAKER, MCEACHRAN (C).

Associate Professors:

GIRDWOOD, PENHALLOW,
WILKINS, MILLS.
STEWART.

Dean of the Faculty:—D. MCEACHRAN, D.V.S.
Secretary:—C. MCEACHRAN, D.V.S.

The Second Session of the Faculty (being the twenty-fifth of the Montreal Veterinary College) will be opened on Wednesday, the 1st October, 1890, by an introductory lecture, at 8 p.m., in the lecture-room of the Faculty, No. 6 Union Avenue. The regular course of lectures will begin on Thursday, 2nd October, at the hours named in the time-table, and will continue till the end of March.

The complete course of study in this Faculty extends over three years. Graduates of recognized Medical Colleges are allowed to present themselves for examination after regular attendance on one full course; graduates of recognized Agricultural Colleges where Veterinary Science constitutes a branch of study, after regular attendance for two full courses.

Allowances will be made to students of Human or Comparative Medicine, or others who can produce certified class tickets for attendance on any of the subjects embraced in the curriculum from any recognized college or university.

Graduates and students who avail themselves of the above privileges will nevertheless be required to pass an examination in the subjects comprised in the three years' course, unless, from satisfactory evidence otherwise produced, the examiners consider it to be unnecessary.

Graduates of recognized Veterinary Colleges desirous of taking the degree may do so by attendance on the final subjects for one

full session, but will be required to pass the examinations on all the subjects embraced in the curriculum, botany excepted.

Occasional and agricultural students will be received without matriculation for attendance on any particular series of lectures. Such students will not be examined, nor will they be entitled to receive class certificates except as occasional students, nor will such attendance be accepted, should the student subsequently wish to become a regular student of the Faculty.

I. MATRICULATION.

Every student, previous to his admission, must produce a certificate of educational acquirements satisfactory to the Faculty, or submit himself to a matriculation examination in writing, reading aloud, dictation, arithmetic (including vulgar fractions), English grammar (as a text-book, Miller's Swinton's Language Lessons). It will be seen that this examination is far from severe; yet it affords a certain guarantee that illiterate men will not be admitted.

A. N. Shewan, M.A., will hold the matriculation examination on Saturday, 4th October, at 10 o'clock, at the College, 6 Union Avenue, when all those intending to enter the course should present themselves for examination. Candidates possessing certificates of education or of previous matriculation should produce them for the inspection and approval of the examiner. Graduates in Arts or Medicine and graduates of recognized Agricultural Colleges are not required to be examined

No College is recognized unless its students are required to matriculate.

II. ENREGISTRATION AND PAYMENT OF FEES.

The following are the College regulations :—

All students desirous of attending the Veterinary Lectures shall, at the commencement of each session, enrol their names and residence in the register of the Veterinary School, and procure from the Registrar a ticket of Enregistration, for which each student shall pay a fee of $5.

The said register shall be closed on the last day of October in each year. The fees are payable to, and all class tickets will be issued by the Registrar, and must be paid in advance (except under special circumstances) at the time of enregistration.

All students must enregister, including those who receive free bursaries.

Fees for the whole course are $180, which may be paid in three annual payments of $60 each, which, in all cases, must be paid on entering. Matriculation fee, $5, which is to be paid prior to the examination; $5 for registration, and $5 for re-registration, payable at the beginning of each of the following two Sessions, and $20 on receiving the diploma. Students who are allowed time fo previous study will be required to pay full fees.

III. STUDENTS OF THE PROVINCE OF QUEBEC.

In consideration of the annual grant, the Council of Agriculture have the privilege of sending thirteen pupils, free of expense, to the whole course—Registration and Botany excepted, the fee for which is $5 each. These Bursaries may be obtained by young men resident in the Province of Quebec, by application made to the Dean of the College, in the hand-writing of the applicants, accompanied by a recommendation from the Agricultural Society of the district in which they reside, provided the Council considers them qualified by education and in other respects for entering the College.

In all cases, except when specially arranged, Bursars will be required to give a guarantee that they will attend three Sessions; and failing to do so, they will have to pay the fees for the Sessions which they have attended.

IV. GENERAL REGULATIONS.

Students of this Faculty will be graded as of the first, the second, and the final year.

In each year students will take the studies fixed for that year only, unless by special permission of the Faculty.

Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such, and shall obtain a ticket or tickets for the class or classes they desire to attend.

All Students shall be subject to the following regulations for attendance and conduct:—

A class book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

Punctual attendance on all the classes proper to his year is required of each Student. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the student, and, if necessary, report him to the Dean.

When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honors, suspend from classes, or report to the Corporation for expulsion.

Any Student injuring the furniture or building will be required to repair the

same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the 30th March following.

Each lecture shall be of one hour's duration, but the Professors shall have the right to substitute an examination for any such lecture.

At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors and such other examiners as may be appointed by the Corporation. The results shall be reported as early as possible to the Faculty.

The students have all the privileges of the McGill Medical Faculty's Laboratories, which aredescribed in its annual calendar.

V. COURSES OF LECTURES.

MEDICINE AND SURGERY.

D. McEACHRAN, F.R.C.V.S.

This Course is intended for students of the second and third years only.

The course embraces the principles and practice of Veterinary Medicine, including the diseases of domestic animals, their nature, causes, symptoms, and treatment. It necessarily includes Pathology and Pathological Anatomy, with daily clinical demonstrations in the hospital and yard practice of the College, as well as illustrations from plates, preserved specimens, and fresh material furnished by the Pathologist.

The course on Surgery embraces Surgical Anatomy and Practices of Surgery, and will be illustrated by a large collection of surgical appliances, about to be added to the College material for the illustration of lectures.

The large and varied practice of the College furnishes abundance of cases for demonstration purposes.

Special lectures will be given on Sanitary Science, Quarantine, inspection of meat and milk, and also on the examination of horses for soundness.

ANATOMY.

M. C. BAKER, D.V.S.

In this course the Anatomy of the horse is the subject of special study ; while the structural differences of all the domestic animals are carefully explained and illustrated by fresh subjects. There is a very large collection of elastic anatomical models by Dr. Auzoux, of Paris, natural injections and dissections, and a most

complete collection of diagrams, including Marshall's complete set, Mons. Achille Comte's Anatomical and Zoological series, also a large collection of drawings specially prepared for the school by Mr. Scott Leighton, artist, Boston, and Mr. Hawkset, Montreal.

The Dissecting Room is open at all hours, subjects are easily procured, and either the Professor or Demonstrator will be in attendance to superintend and direct students in practical dissection. The room is furnished with every convenience, is thoroughly lighted, and affords students all that can be reasonably desired.

MATERIA MEDICA.

JAMES STEWART, M.D.

This course comprises :—

A description of the Pharmacology and Therapeutics of the more important medicinal agents, as well as a special course on the properties, preparation, physiological and therapeutic actions of all the medicines used in Veterinary practice.

Students are also required to do practical work, in compounding and administering medicines, in the pharmacy and hospital.

CATTLE PATHOLOGY AND OBSTETRICS.

C. McEACHRAN, D.V.S.

A special course on Cattle Diseases and Veterinary Obstetrics will be delivered, embracing the history of Cattle Plagues: their nature, symptoms, pathological anatomy, prophylactic and therapeutic treatment; breeding and general management of breeding animals diseases incident to gestation and parturition, etc.

SPECIAL COURSE ON DOGS.

Professor Wesley Mills will give a special course on Dogs, which will include :—

(1) Lectures on the physical and psychic characteristics of all the leading varieties, illustrated by specimens from his own kennels and other sources, as well as by plates, etc.

(2) The principles of training; the feeding and general management of dogs.

(3) The principles of breeding; the management of brood bitches and the rearing of puppies.

(4) Bench show management and the public judging of dogs.

(5) The rights and duties of dog owners.

In all of the above courses the clinical and pathological aspects of the subjects will be considered, as well as the normal.

SPECIAL COURSE ON STOCK-BREEDING.

Professor D. McEachran will during the session deliver a special course of lectures on the Breeds of Horses, Cattle, Sheep and Swine, embracing their breeding and management on farms and on the prairies. This course will also

embrace inspection and transportation of animals by railroad and steamer, subjects of general information of great value to Practitioners of Comparative Medicine.

The above special courses are free to all students.

The courses in the following subjects are the same with three in the Faculty of Medicine, which see.

BOTANY.—Prof. Penhallow.
ZOOLOGY.—Prof. Sir. W. Dawson.
CHEMISTRY.—Prof. Girdwood, M.D.
PHYSIOLOGY.—Prof. J. Wesley Mills, M.D.
HISTOLOGY.—Prof. G. Wilkins, M.D.
COMPARATIVE PATHOLOGY.—Demonstrator Wyatt Johnson, M.D.

VI. THE MUSEUM

contains a large collection of natural and artificial specimens, consisting of skeletons of almost all the domestic animals, numerous specimens of diseased bones, preparations by Dr. Auzoux of all the different organs in the body, natural dissections, colored models, diagrams, etc., etc., all of which are used in illustrating the lectures, and to which the students have frequent opportunities of referring. Students will also enjoy the privileges of the Museum of the Medical Faculty of McGill University, which is rich in pathological specimens and of the Peter Redpath museum of Zoology and Botany.

VII. THE PHARMACY.

All the medicines used in the practice of the College are compounded by the students, under the direction of the Professors, from prescriptions for each particular case, and most of them are administered or applied by them. For this purpose they are detailed for certain pharmaceutical duties alternately. By this means they become familiar with the physical properties, compatibilities, doses and uses of the medicines, and become expert in administering them to the different patients brought for treatment.

VIII. THE PRACTICE.

The Hospital and Daily Clinics, as well as a very extensive out-door practice, including most of the largest stables in the city and numerous farms in the vicinity, afford excellent opportunities for clinical observation on horses of all breeds and ages. Owing to the numbers of cattle kept in the city, and the valuable thoroughbred herds in the neighborhood, advanced students are enabled to see and do considerable cattle practice. The dog practice is the largest in Canada. All canine diseases can be studied clinically, owing to the large number of dogs brought to the College for medical or surgical treatment.

Senior students will be appointed to act alternately as dressers in the Hospital, and first and second year men must assist in administering medicines and at operations.

IX. FREE CLINICS.

To afford the students still more extensive opportunities of clinical observation, an hour a day will be given to free clinics for animals belonging to the poor, which will be duly advertised.

X. QUALIFICATIONS FOR THE DEGREE.

Candidates for the Final Examination shall furnish testimonials of attendance on lectures on the following subjects:—

Botany or Zoology, Histology,	One course of six months, 1st year.
Chemistry, Physiology, Anatomy,	Two courses of six months, 1st and 2nd years.
Cattle Diseases and Obstetrics, Practice of Medicine and Surgery, Materia Medica,	Two courses, 2nd and 3rd years.

No one will be permitted to become a candidate for examination who shall not have attended at least one full course of lectures in this Faculty, including all the subjects embraced in the curriculum.

Courses of less length than the above will be received only for the time over which they have extended.

Students, except by special permission of the Faculty, must pursue the subjects of Anatomy, Chemistry, Histology and Botany in their first session, and are advised to take Physiology in addition.

Candidates who fail to pass in not more than two subjects of the first two years may be granted a supplemental examination at the beginning of the following session.

Supplemental examinations will not be granted, except by special permission of the Faculty, and on written application stating reasons.

Candidates who fail to pass in a subject of which two courses are required may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon.

In addition to the written and oral examinations, candidates must pass a practical clinical test, including examination of horses for soundness, written reports being required; the clinical reports to include diagnosis, prognosis and treatment.

The following oath or affirmation will be exacted from the candidate before receiving the degree:—

DECLARATION OF GRADUATES IN COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

I, ————, promise and solemnly declare that I will, with my best endeavors, be careful to maintain the interests of this University, and that, to the best of my ability, I will promote its honor and dignity.

XI. EXAMINATIONS.

First Year—Pass Examinations in Botany or Zoology and Histology.

Second Year.—Pass Examinations in Chemistry, Physiology and Anatomy.

Third Year.—Pass Examinations in Practice of Medicine and Surgery and Veterinary Obstetrics, and Diseases of Cattle and Materia Medica.

N.B.—Examinations will be held from time to time during the session, and attendance at these is compulsory.

XII. AGE FOR GRADUATION.

Students under seventeen will be received as apprentices, but cannot be entered as regular students before attaining that age.

Minors may pass the Examinations, but cannot receive the Diploma until they are twenty-one years of age.

XIII. PAST SESSION.

The total number of Students enregistered in this Faculty during the past session was 51, of whom there were from

Quebec.....23	Massachusetts.....7	New Hampshire..1
Ontario.....7	New York.....4	Montana.....1
Nova Scotia.....1	Minnesota.....1	Texas.....1
Manitoba.....1	Indiana.....1	Arkansas.....1
North-West Territories..1	Wisconsin 1	

For further information see the special announcement of the Faculty, which may be had on application to the Secretary.

University Regulations Governing the Conferring of the Degree upon former graduates of Montreal Veterinary College.

The Degree of Doctor of Veterinary Science may be conferred on former graduates of Montreal Veterinary College, at any Convocation of McGill University held for conferring degrees, subject to the following regulations, which were adopted at a meeting of the Corporation of McGill University, held on 22nd January last, governing the conferring of Degrees on former graduates :—

1st.—That the candidate must be found to have conducted himself throughout his professional career with honor and integrity.

2nd.—That he has not been connected with the manufacture or sale of proprietary medicines.

3rd.—That he has been engaged in actual practice for at least one year since graduating, or that he has been engaged in professional study at some European school.

4th.—That he shall be required to satisfy the Board that he has made reasonable progress in professional knowledge and skill.

In estimating the fitness of a candidate for a degree, account will be taken specially of work done in professional teaching, original research, publication of books or contributions to the journals of the profession.

The fee for the Diploma shall be Twenty Dollars.

An affirmation shall be administered similar to that of other Faculties, and in English.

The Degree may be conferred on absentees.

The regulations relating to fees and affirmations shall apply to ordinary undergraduates on taking the Degree.

Candidates intending to apply for the Degree of D.V.S. should notify the Registrar of the Faculty at their earliest convenience, and at the same time state the grounds explicitly on which they base their claims for the Degree.

University School Examinations.

1891.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE, AND RECOGNIZED BY THE PROTESTANT COMMITTEE OF THE COUNCIL OF PUBLIC INSTRUCTION.

FOR CERTIFICATES OF THE UNIVERSITIES AND THE TITLE OF ASSOCIATE IN ARTS.

These Examinations are held in Montreal and at Lennoxville; and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with the names of satisfactory Deputy Examiners, and guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls from any Canadian school.

SUBJECTS OF EXAMINATION.

I. PRELIMINARY SUBJECTS.

English Reading	30	*Marks.*
Writing	30	do
English Dictation	50	do
English Grammar including easy Analysis	50	do
Arithmetic (all the ordinary rules, including square root)	100	do
Geography (acquaintance with the maps of each of the four continents, and of British North America)	50	do
British History and *Canadian History*	50	do
*New Testament History** (Gospels and Acts, as in Maclear)	50	do

* Candidates will be exempted from examination in this subject only if their parents or guardians make written objection thereto.

II. OPTIONAL SUBJECTS.

Section 1.—Languages.

Latin :—

Cæsar.—Bell. Gall., Bk. I.
Virgil.—Æneid, Bk. I., lines 1–300.
Cicero.—In Catilinam, Oratt. I. and II.
} 150 marks.

Greek :—

Xenophon.—Anabasis, Bk. I.
Homer.—Iliad, Bk. IV.
} 150 do

French :—

Grammar, Dictation.
Darey's Lectures Françaises (selected extracts).
Re-translation, English into French.
} 120 do

German :—

Grammar, Adler's Reader, Sections I. and II. Translation from German into English.	120	do

Section 2.—Mathematics, Natural Philosophy, &c.

Geometry :—

Euclid, I., II., III.	150	do

Algebra :—

Elementary Rules, Involution, Evolution, Fractions, Simple Equations.	150	do

Plane Trigonometry.

(As in Hamblin Smith, pp. 1-100, omitting Ch. XI.)	100	do

Natural Philosophy.

Mechanics and Hydrostatics (as in any ordinary School Text Book).	100	do
Geometrical and Freehand Drawing *Geometrical.*—Vere Foster R^1, R^2, R^3, problems 119 to 129. *Freehand.*—Rules of Perspective. Drawing from the object.	100	do

Section 3.—English.

The English Language.

Meiklejohn's English Language, pts. I., II., III. Trench's Study of Words.	120	do

English Literature.

Meiklejohn's English Language, pt. IV. Shakespeare, Julius Cæsar. Scott's Lady of the Lake.	120	do
History.—(As in Primers of Greece and Rome, and Collier's Great Events.)	100	do
Geography.—Physical, Political and Commercial	100	do

Section 4.—Natural Science, &c.

Zoology (as in Nicholson's Introductory Text-Book)	100	do
Botany (as in Spotten's High School Botany, with Analysis according to the method of Nelson's "Herbarium and Plant Descriptions.")	100	do
Geology (as in Dana's Text-Book)	100	do
Chemistry (as in Remsen's Elements of Chemistry, pp. 1 to 160)	100	do
Physiology and Hygiene (as in Cutter's Intermediate)	100	do

GENERAL REGULATIONS.

1. For the Certificate of ASSOCIATE IN ARTS, Candidates must pass in all the preliminary subjects, and also in the Optional subjects contained in one of the three following groups :—

First.—(*a*) Two subjects of Section 1, one of them being Latin or Greek. (*b*) Geometry or Algebra of Section 2. (*c*) Two of the nine subjects of Sections 3 and 4.

Second.—(*a*) French and German of Section 1. (*b*) Geometry or Algebra of Section 2. (*c*) Two subjects of Section 3. (*d*) One subject of Section 4.

Third.—(*a*) One subject of Section 1. (*b*) Two subjects of Section 2. (*c*) Three of the nine subjects of Sections 3 and 4.

2. For the JUNIOR CERTIFICATE, Candidates must pass in all the Preliminary subjects and also in the following Optional subjects :—

(*a*) One subject of Section 1. (*b*) One subject of Section 2. (*c*) One of the nine subjects of Sections 3 and 4.

3. Candidates will not be considered as having passed in any subject, unless they have obtained at least *one third* (and, in the case of English Reading and English Dictation, *two-thirds*) of the total number of marks obtainable in that subject.*

*When (*e. g.*, in History, English Language, &c.) two or more books or subjects are prescribed for one examination it is necessary to pass in each. Candidates will not be allowed to pass in the Preliminary Grammar, unless they show a satisfactory knowledge of Syntax (Parsing, Analysis, and questions connected therewith). In Classics at least one-third of the marks allotted to the grammatical questions must be obtained.

4. The total number of Marks gained by every Candidate in the Optional subjects shall be added up, and the Candidates arranged in order of merit in a printed list, at the close of the Examination, those who are over 18 years of age on the first day of the examination being in a separate list. No marks in any subject shall be counted, unless the Candidate has gained at least the minimum number of marks required for passing in that subject. The marks in not more than three subjects of Section 1, three subjects of Section 2, and three subjects selected from Sections 3 and 4, will be counted. Candidates taking one classical and one modern language may, instead of a third language, take an additional subject of Section 4, with Geometrical or Freehand Drawing (150 marks in the aggregate). Candidates who take two modern languages may take an additional subject of Section 4, with drawing as above, to be reckoned at 180 marks. Candidates taking one subject only of Section 1 may take four Subjects selected from Sections 3 and 4.

5. Candidates who obtain at least *two-thirds* of the marks in any Optional subject will be entitled to a certificate of creditable answering in that subject, provided they satisfy the conditions for either Associate in Arts or Junior Certificate.

6. Candidates who pass in the subjects of the University Matriculation Examinations may, without further examination, enter the Faculties of Arts and Applied Science.

7. Candidates who fail, or who may be prevented by illness from completing their examinations, may come up at the next examination without extra fee.

8. Candidates who pass in all the Preliminary subjects may at the next examination take the Optional subjects only, and without extra fee.

9. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

10. The examinations will begin on Monday, June 1st, at 9 a.m.

11. Lists of the names, ages, and Optional subjects to be taken by the Candidates, together with the fee of $4 for each Candidate, must be transmitted to the Secretary of McGill University on or before May 1st. (Blank forms and copies of the Regulations will be furnished on application.)

Extracts from Darey's Lectures Françaises, for the examination of 1891.

Extracts beginning on pp. 10, 13, 15, 20, 32, 33, 37, 42, 47, 51, 56, 63, 68, 74, 76, 85, 87, 92, 94, 99, 103, 110, 118, 125, 129, 133, 144, 149, 151, 156, 158, 162, 166, 169, 176, 179, 182, 196, 215.

NOTE.—No fees will be exacted for the examination of pupils of Academies under the control of the Protestant Committee; but in order to obtain the certificate from the Universities, the prescribed fees, viz.: $4.00 for A. A. certificates, and $2.00 for junior certificates, must be paid to the Secretary of the University Examiners.

The complete regulations of the Protestant Committee of the Council of Public Instruction with reference to these examinations may be obtained on application to the Rev. E. I. Rexford, Secretary, Department of Public Instruction, Quebec.

McGill Normal School.

The McGill Normal School in the city of Montreal is established chiefly for the purpose of training teachers for the Protestant population, or for all religious denominations of the Province of Quebec other than the Roman Catholic. The studies in this school are carried on chiefly in English, but French is also taught.

Government of the School.

The Corporation of McGill University is associated with the Superintendent of Public Instruction in the direction of the McGill Normal School, under the regulations of the Protestant Committee of the Council of Public Instruction, and it is authorized to appoint a standing committee consisting of five members, called "The Normal School Committee," which shall have the general supervision of the affairs of the Normal School. The following members of the Corporation of the University constitute the Committee of the Normal School for the Session of 1890-91.

NORMAL SCHOOL COMMITTEE.

Sir Wm. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of the University, *Chairman.*

Mr. Samuel Finley. } Governors of McGill College.
Mr. George Hague. }

Rev. George Cornish, LL.D. } Fellows of McGill University.
J. R. Dougall, M.A. }

J. W. Brakenridge, B.C.L., *Acting Secretary.*

OFFICERS OF INSTRUCTION.

McGill Normal School.

Sampson Paul Robins, M.A., LL.D., *Principal and Ordinary Professor of Mathematics, and Lecturer on Art of Teaching and Natural Science.*

George W. Parmelee, B.A., *Ordinary Professor of English Language and Literature, and Instructor in Classics.*

Madame Sophie Cornu, *Professor of French.*

Mr. R. J. Fowler, *Instructor in Music.*

——— *Instructor in Elocution.*

Miss Green, *Instructor in Drawing.*

Miss Robins, *Assistant to the Principal.*

Mr. W. H. Smith, *Instructor in Tonic Sol-Fa.*

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Mr. Thos. B. Smiley, *Head Master of Boys' School.*

Miss Jane A. Swallow, *Head Mistress of Girls' School.*

Miss Lucy H. Derick, *Head Mistress of Primary School.*

ANNOUNCEMENT FOR THE SESSION 1890-91.

This Institution is intended to give a thorough training to teachers, by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The thirty-fifth session of this school will commence on the first of September, 1890, and close on the twenty-ninth of May, 1891. The complete course of study extends over four years, and the Students are graded as follows:—

1.—*Elementary School Class.*—Studying for the Elementary School Diploma.

2.—*Model School Class.*—Studying for the Model School Diploma.

3.—*Academy Class.*—Studying for the Academy Diploma.

All the following regulations and privileges apply to male and female students alike.

I. TERMS OF ADMISSION.

(Extracted from the Regulations of the Protestant Committee of the Council of Public Instruction.)

Any British subject who produces a certificate of good moral character from the minister of the congregation to which he belongs, and evidence to show that he has completed the sixteenth year of his age, may be admitted to examination for entrance into the Elementary School Class, or, if he has completed his seventeenth year, to the entrance examinations of the Model School Class. (*See Note a.*)

Previous to admission to the Elementary School Class, every pupil-teacher shall undergo an examination as to his sufficient knowledge of reading, writing, the rudiments of grammar in his own language, geography, and arithmetic; before admission to the Model School Class he must give proof of his knowledge of the subjects of the previous year. Except as stated below, the exam-

ination shall take place before the Principal, or before such other person as he may specially appoint for the purpose. (*See Note b.*)

All candidates who present certificates of having passed in Grade III. Model School Course, and all holders of Elementary School diplomas, shall be exempt from examination for admission to the Elementary School Class. All candidates who have passed at the A. A. examinations, taking two-thirds of the aggregate marks, and who have passed in French, and all holders of Model School diplomas, shall be exempt from examination for admission to the Model School Class. Holders of Elementary School diplomas, desiring admission to the Model School Class, shall be examined in Algebra, Geometry, and French only.

Candidates shall be admitted to examination for entrance only at the times regularly appointed by the Principal of the school at the beginning of the session. Candidates exempt from examination can only be admitted during the first week of the session, except that teachers who may be actually engaged in teaching at the commencement of the session may, at the discretion of the Principal, be admitted to the Elementary School Class not later than the close of the Christmas vacation. No teacher-in-training admitted later than the first of October shall share in that part of the bursary fund which is distributed at Christmas.

In exceptional cases the Principal of the Normal School may admit on trial to the classes persons whose qualifications may be insufficient for entrance. Such persons may be excluded from the school by the Principal whenever he may judge it best so to do ; but none shall be permitted to enter or to remain on trial after the semi-sessional examinations.

No candidate is admitted to the Normal School until the provisions of the school laws respecting admission have been fulfilled. (*See Note c.*)

II. PRIVILEGES OF TEACHERS-IN-TRAINING.

All teachers-in-training are entitled to free tuition.

At the close of the semi-sessional examinations, the sum of $400 from the bursary fund will be divided among the forty most successful pupils who do not reside at home with parents or guardians during their attendance at the school. Similarly the sum of $800

will be divided at the close of the sessional examinations. The remainder of the bursary fund will be divided as an allowance for travelling expenses among teachers-in-training residing in the Province of Quebec, at a distance of more than ninety miles from Montreal, in a proportion determined by the excess of distance above ninety miles, it being provided that no allowance for travelling expenses shall exceed ten dollars.

All teachers-in-training who pass the semi-sessional examinations in the Normal School with 60 per cent. of the total marks, and who have not fallen below 50 per cent. in any one of the groups of subjects, English, Mathematics, French, and Miscellaneous, nor in any one of the subjects required by the Syllabus of Examination prescribed for diplomas of the grade to which they aspire, shall be entitled to continue in their classes after Christmas. Except by the special permission of the Principal, none others shall be entitled to this privilege, nor to a share in the Christmas bursary.

All teachers-in-training, who attain the standards defined above at the final examinations in the Normal Schools, shall be entitled to diplomas of the grade of the class to which they belong, and except with the concurrence of the Principal of the school and the professor of each subject in which there has been failure, none others shall receive diplomas or share in the bursary fund.

All holders of Elementary School diplomas obtained by reaching the standards defined above shall be entitled to admission to the Model School Class; none others, without the special permission of the Principal. Such holders of Elementary School diplomas as have taken not less than 75 per cent. of the total marks, nor less than 60 per cent. of those in any subject essential to the diploma, according to the Syllabus of Examination of the Protestant Committee of the Council of Public Instruction, shall be entitled to admission among the "selected students" mentioned in the following paragraph, but others may be so admitted by the Principal (*See Note d.*)

III. STUDENTS FOR THE ACADEMY DIPLOMA.

1. The Normal School shall bring up selected students at the end of the Model School year to the examinations for the entrance into the first year of the Faculty of Arts of the Universities. They may

be examined either at the examinations for the Associate in Arts in June, or at those for the matriculation in autumn, and shall take the full course of study in the first and second years.

2. Such students shall be enrolled in the Normal School as students of the Academy Class, and shall be under the usual pledge to teach for three years. They shall engage in the practice of teaching at such times and in such schools as may be arranged by the Principal from time to time in consistence with their college work, and shall be under the Principal and the regulations of the Normal School.

3. On report of the colleges which such students may be attending, that they have passed creditably in the Christmas and sessional examinations respectively, they shall be entitled to bursaries, not exceeding thirty dollars per session, in aid of fees and board. Such bursaries may be paid by the Normal School Committee out of any fund available for the purpose.

4. On passing the intermediate, or equivalent, examination of the Universities, such students will be entitled to receive Academy diplomas, in accordance with the regulations of the Protestant Committee of the Council of Public Instruction for such diplomas.

5. Such students may, with the advice of the Principal, attend classes at McGill or its affiliated colleges, or at Bishop's College, and the Normal School Committee shall make such arrangements as may be possible for free tuition at such colleges.

6. It shall be competent to the Principal of the Normal School to provide any tutorial assistance that may in his judgment be necessary for Academy students. Also, it shall be his duty in the case of optional studies to select for the students those required for the curriculum of the Normal School.

7. It shall be competent to students who have taken Academy diplomas as above to continue for two years longer at the University, or to return thereto, after teaching for a time, in order to take the degree of Bachelor of Arts; but they shall be held bound to fulfil their engagements to teach, and they shall not be entitled to bursaries. (*See Note c.*)

Holders of Model School Diplomas of the McGill Normal School, who are certified by the Principal of the Normal School to have taken 75 per cent. of the total marks at their final examinations,

with not less than 60 per cent. of the marks in Mathematics, French, Latin and Greek respectively, shall be admitted without further examination to the first year in Arts of the McGill University; but all such Students must make good their standing in the University at the Christmas examinations.

Teachers-in-training who do not attain the standard defined above, must, in order to enter the University, pass the usual examination for Matriculation.

Exemption from the payment of fees in McGill College for the first year will be granted to the three holders of Model School Diplomas, not being resident in Montreal, who, of all those entering the University on the conditions stated above, have gained the highest aggregate of marks at their final examinations in the Normal School, as certified by the Principal of the Normal School.

Exemptions from fees in the second year will be granted to the three students entering from the Normal School who, with creditable standing in all their examinations at the close of the first year in Arts, have taken the highest aggregate of marks of any Normal School Students of their year.

IV. CONDITIONS OF CONTINUANCE IN THE NORMAL SCHOOL.

Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, or keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled. (*See Note c.*)

Each professor shall have the power of excluding from his lectures any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations, until the matter can be reported to the Principal.

V. ATTENDANCE ON RELIGIOUS INSTRUCTION.

Teachers in-training will be required to state with what religious denomination they are connected; and a list of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with the request that he will meet weekly with that portion of the teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church at least once every Sunday.

VI. BOARDING HOUSES.

1. The teachers-in-training shall state the place of their residence; and those who cannot reside with their parents will be permitted to live in boarding houses, but in such only as shall be specially approved of. No boarding houses having permission to board male teachers-in-training will be permitted to receive female teachers-in-training as boarders, and *vice versa*. (*See Note g.*)

2. They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

3. They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

4. A copy of the regulations shall be sent to all keepers of lodging-houses at the beginning of the session.

5. In case of lodgings being chosen by parents or guardians, a written statement of the parent or guardian shall be presented to the Principal.

6. All intended changes of lodgings shall be made known beforehand to the Principal or to one of the professors.

7. Boarding-houses shall be visited monthly by a committee of professors.

8. Special visitations shall be made in case of sickness being reported, either by professors or by ladies connected with the school; and, if necessary, medical attendance shall be procured.

9. Students and lodging house keepers are required to report, as soon as possible, all cases of serious illness, and all infractions of rules touching boarding houses.

VII. ACADEMY DIPLOMAS.

Granted under the regulations of the Protestant Committee of the Council of Public Instruction.

Graduates in Arts from any British or Canadian University, who have passed in Latin and Greek in the Degree Examinations, or

who have taken at least second class standing in Latin and Greek at their Intermediate Examinations, shall be entitled to receive first class Academy diplomas, provided that they have also taken either (*a*) the regular course in the Art of Teaching at the McGill Normal School (or other public training institution outside the Province approved by the Protestant Committee), or (*b*) a first class standing in the special professional examination provided for such graduates by the McGill Normal School. Such aforesaid graduates as take only second class standing in the special professional examination of the foregoing sub-section (*b*) shall be entitled to second class Academy diplomas only.

Teachers taking Academy diplomas in course from the McGill Normal School, who take at least second class standing in Latin and Greek in the Intermediate Examination of the Universities, shall be entitled to receive first class Academy diplomas, otherwise their diplomas shall be second class.

Teachers who hold (*a*) Academy diplomas granted before the first July, 1886, or (*b*) second class Academy diplomas granted under these regulations, and who produce satisfactory proof to the Protestant Committee that they have taught successfully for at least ten years, shall, when recommended by the committee, be entitled to receive first class Academy diplomas.

Any candidate who presents to the Principal of the McGill Normal School, (*a*) the requisite certificates of age and of good moral character according to Form No. 1 (page 11), and (*b*) satisfactory certificates that he has complied with either of the foregoing regulations, shall be recommended by him to the Superintendent of Public Instruction for an Academy diploma of the class to which he is entitled under these regulations.

The examination of Bachelors of Arts and of members of graduating classes, who are candidates for Academy diplomas, shall be held in the McGill Normal School, on or after the 15th of May each year, and the results shall be declared at the close of the Normal School Session in May. (*See Note f.*)

The Principal of the school is authorized to send examination papers, based on the syllabus given in Reg. 59, to the University of Bishop's College for the use of students in the graduating class, and such students shall receive their diplomas on their graduating.

The period of study in the Model School for such candidates shall be fixed from time to time by the Principal, and shall extend over at least four weeks.* Candidates who produce certificates that they have taught successfully for at least one year may be exempted from attendance at the Model School.

The results of the examination must show that the candidate has a competent knowledge:

1. Of the School Laws of the Province and of the regulations made by the Protestant Committee of the Council of Public Instruction, in so far as these refer to the duties of teachers.

2. Of the aim and possible attainment of school life, of the annual progress to be expected, of the best classification and the best arrangement of school duties tending to this end, and of the mode of recording all facts representing the attendance and progress of pupils that may be necessary.

3. Of discipline, and, in relation to it, the teacher, the parents, the pupils, rewards, punishments, and the formation of the habit of instinctive obedience.

4. Of the best methods of imparting knowledge; how to fix it in the memory, how rightly to govern a class in receiving knowledge, and how to conduct a successful class recitation, together with the methods of instruction in each important branch of school work.

5. Of methods of using books aright, and of investigating truth by weighing evidence and by using the senses as instruments of research.

6. Of the physical, mental, and moral constitution of the child, and the demands that society will hereafter make upon him.

To prepare for such an examination, the candidate should carefully weigh his own experiences as a learner, should closely examine the methods in vogue in a good school, and should add to the impressions received from his general reading the results of studying the text-books on School Management and School Methods, prescribed for the Academy diploma, a thorough knowledge of which will be required.

* Bachelors of Arts will observe that the Principal of the Normal School has no power to dispense with this condition. Students in Arts about to graduate, and desirous of securing the Academy diploma of the Normal School, are recommended to arrange with the Principal for fulfilling this condition during the earlier part of the Session.

These books are Baldwin's Art of School Management and Gladman's School Methods.

FORM No. 1.

"This is to certify that I, the undersigned, have personally known and had opportunity of observing..... .....for the .....last past, that during all such time *his* life and conduct have been without reproach; and I affirm that I believe *him* to be an upright, conscientious, and strictly sober *man*."

This Certificate must be signed by the Minister of the Congregation to which the Candidate belongs, and by two School Commissioners or Trustees or Visitors.

VIII. NOTES ON THE PRECEDING REGULATIONS.

Chiefly extracted from the By-Laws of the McGill Normal School.

(*a*) On application to the Principal of the School, candidates for admission will be furnished with forms of application, containing the required forms of certificate of good character and of agreement to teach for three years in some Public School in the Province of Quebec.

(*b*) Teachers-in-training admitted to the Elementary School class at the beginning of a session must be able to parse correctly a simple English sentence; to write a neat dictation from any school reader, with no more than five per cent. of mistakes in spelling, in the use of capitals, and in the division of words into syllables; to give the names and state the positions of the continents, of the oceans, of the greater islands, peninsulas, capes, mountains, gulfs, bays, straits, lakes, and rivers, and of the chief political divisions and most important cities of the world; and to work correctly examples in the simple rules of arithmetic and in fractions.

(*c*) Teachers-in-training are expected to give their whole time and attention to the work of the school, and are not permitted to engage in any other course of study or business during the session of the school.

There shall be no intercourse between male and female teachers-in-training while in school, or when going to or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Teachers-in-training who leave the Normal School in the middle of a session are expected to assign to the Principal satisfactory reasons, accompanied, in case of failure of health, by medical certificates.

(*d*) The J. C. Wilson prize of forty dollars and a book, annually chosen by the donor, shall be given to that teacher-in-training of the Elementary School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

The Prince of Wales' medal and prize shall be given to that teacher-in-training of the Model School class who passes for the diploma, and takes the highest aggregate of marks at the final examination of the year.

The Lord Stanley silver medal shall be given to that teacher-in-training of the Academy class, who at the University Intermediate Examinations has passed for a diploma with the highest aggregate of marks. If in any year there are teachers-in-training in two Universities, the Principal of the Normal School, in view of the examinations set, and of the number of marks reported for each examination shall determine to whom this medal shall be awarded.

(*e*) In order to be recognized as teachers-in-training for the Academy diploma, students who have fulfilled the conditions stated in the regulations of the Protestant Committee of the Council of Public Instruction must apply at the beginning of each collegiate year to the Principal of the Normal School for enrolment, and for certificates of enrolment to be presented to the Dean of the Faculty of Arts. Having entered college, they must report to the Principal of the Normal School from time to time as he may require; and must furnish him with certificates of having successfully passed their several examinations, without which certificates, signed by the Dean of the Faculty or his representative, no bursaries shall be paid.

(*f*) The date of the examination of graduates in Arts for Academy diplomas shall be the 20th day of May, or the school day next succeeding that date; the hours shall be from 10 a.m. to 12 noon.

(*g*) No boarding house is attached to the institution, but every care will be taken to ensure the comfort and good conduct of the Students in private boarding houses approved by the Principal, who will furnish lists to applicants for admission. Board can be obtained at from $12 to $16 per month.

IX. COURSE OF STUDY.

N.B.—The subjoined Course of Study has been designed, and all instruction in it is given, with express reference to the work of teaching.

In addition to the work of the School carried on by its regular professors, as detailed in the subjoined course of study, arrangements have been made by which lectures on School Law will be delivered by the Rev. E. I. Rexford, B. A., Secretary of the Department of Public Instruction; on Botany, by Professor Penhallow, B. Sc.; and on Chemistry and on Physiology and Hygiene, by Thomas D. Reed, Esq., M. D.

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accommodating teachers actually in charge of schools at the commencement of the Session, and whose previous

education may enable them to enter at a more advanced period, the course of study in this class is divided into terms, as follows :—

FIRST TERM, from September 1st to December 3rd.

(*Entrance Examination as stated above.*)

English.—The structure of sentences. Orthography and orthoepy. Penmanship. The study of Milton's L'Allegro.

Geography.—General view of continents and oceans. Map of North America with special reference to the Dominion.

History.—Outline of general and sacred history.

Arithmetic.—Simple and compound rules.

Algebra.—The elementary rules.

Geometry.—Elementary Notions.

French.—Darey's Principes de Grammaire Française to page 50, with verbs of first conjugation. Méthode Berlitz.

French Geography.—Eléments de Géographie Moderne, Amérique.

Botany.—High School Botany, Spotten.

Chemistry.—Lectures.

Reading and Elocution.

Drawing.—Elements, simple outlines and map drawing.

Music.—Vocal music with part songs. Junior Certificate of Tonic Sol-Fa College.

Art of Teaching.—Lectures on school organization and discipline, and on methods of teaching particular subjects.

SECOND TERM, January 6th to end of Session.

(No pupils will be received after the commencement of this term. Those who enter must pass the examination of the class in the work detailed above.).

English.—Structure of words and sentences. Etymology, derivation and syntax. Study of Milton's Il Penseroso and of Goldsmith's Deserted Village.

Geography.—Contour, elevations, river systems, political divisions and chief cities of South America and of the Old World, with special reference to the British Islands.

History.—England.

Arithmetic.—Fractions, Decimals, Proportion, Interest, Properties of numbers, Mensuration.

Book-keeping.—Single Entry.

Algebra.—Simple equations of one unknown quantity with problems.

Geometry.—First book of Euclid, with deductions.

Art of Teaching.—Lectures on school organization and discipline, and on methods of teaching particular subjects.

French.—Principes de Grammaire Française, page 100, with verbs regular and irregular. Méthode Berlitz.

French History.—Histoire de France.

French Geography.—Europe.

Botany.—High School Botany, Spotten.

Physiology and Hygiene.—Lectures.

Reading and Elocution.

Drawing.—Freehand drawing from the solid, and elements of perspective.

Music.—Elements of vocal music and part songs. Elementary Certificate of Tonic Sol-Fa College.

Practice in Teaching in the McGill Model Schools, as directed by the Principal.

Religious Instruction will be given throughout the Session.

In addition to the text-books named above, each student of the Elementary School Class must be provided with an English Grammar, an English History, an Atlas of recent date, an Arithmetic, an Algebra, and a Euclid.

2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

Students entering the school in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without division into terms.

English.—Principles of grammar and composition. Style. History of the English language. Study of Shakespeare's Tempest, Scott's Lady of the Lake.

Geography.—Mathematical and physical. Use of the globes.

History.—Rome, Canada.

Art of Teaching.—Lectures on the principles of education, especially on those derived from the mental and moral nature of the child.

Arithmetic.—Commercial arithmetic. Logarithms.

Book keeping.—Double entry.

Algebra.—Equations of more than one unknown quantity, and quadratics.

Geometry.—Second, third and fourth books of Euclid, with application to mensuration.

Object Lessons.

Latin.—Grammar, Cæsar Gallic War, Book I. Æneid, Book I, vv. 300.

Greek.—Grammar, Anabasis, Book I.

French.—Translation from French into English, and from English into French, Worman's French Grammar, Lectures Françaises, Méthode Berlitz, Canadian History, L'Histoire du Canada par Miles, French Geography.

Agricultural Science.—Principles, especially chemical and botanical, and application to Canadian agriculture.

Elocution.

Drawing.—Elements of perspective, drawing from the cast and map drawing.

Music.—Instrumental music, part songs, and rudiments of harmony. Intermediate Certificate of Tonic Sol-Fa College.

Practice in Teaching.—In the McGill Model Schools, as directed by the Principal.

Religious Instruction throughout the Session.

Such students as, from their conspicuous ability and preparation, may be selected to enter the Academy Class of the Normal School, will, in addition to the work given above, read Xenophon, Anabasis, Book I., and Virgil, Æneid, Book I., with special attention to Greek and Latin Grammar.

In addition to the text-books named above, each student of the Model School Class must be provided with an English Grammar, a History of Canada, a History of Rome, an Arithmetic, an Algebra, a Euclid, and Dawson's Scientific Agriculture.

3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

Will follow for two years the course of McGill University and its affiliated colleges, or that of Bishop's College, Lennoxville, being enrolled on the books of the Normal School, and, if residents of the country, receiving a bursary from the Normal School not exceeding $30 per annum, and such tutorial assistance as may be deemed necessary. Such students must take in their courses such options only as are approved by the Principal of the Normal School.

The course for the current year in McGill College, for first year students, is :—

Greek.—Odyssey, Books XXI. to XXIV. (Selections).

Latin.—Cicero, Select Letters. Virgil, Book IX.

English Language and Literature.—Analysis and Composition. Milton's Comus and Bacon's Essays. Lectures on English Literature.

French.—Darey, Principes de Grammaire Française. La Fontaine, Les Fables, Livres I. and II. Molière, L'Avare. Dictation and colloquial exercises.

Mathematics.—Arithmetic. Euclid, six Books. Algebra to end of quadratics. Plane Trigonometry.

Chemistry.—Lectures illustrated by experiment on chemical theories and laws, and on the more important elements and compounds.

The course for second year students is :—

Greek.—Euripides, Medea.

Latin.—Horace, Epistles, Book II. Tacitus, Germania.

French.—Ponsard, L'Honneur et l'Argent. Racine, Phèdre. Contanseau Précis de Littérature Française. Dr. Johnson, Rasselas.

English Literature.—Shakespeare, A Midsummer Night's Dream. Lectures

Psychology and Logic.—Murray's Hand-book of Psychology. Jevons' Elementary Lessons in Logic.

Botany.—Text-books, Gray and Bessey.

The course in Bishop's College for the current year is:—

Greek.—Æschylus, Prometheus; Plato, Crito.

Latin.—Horace, Odes II.; Sallust, Jugurtha.

English.—Rhetoric and Grammatical Analysis, with a course of Lectures on English Literature.

History.—Greek and Roman.

French.—Translation, Grammar and Composition.

Mathematics.—Euclid, Books I., II., III., IV., and VI. Algebra to Progressions. Arithmetic.

Physics.—Balfour Stewart's Elementary.

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Boys' School.—Thomas B. Smiley, *Head Master.*

Selina Sloan, Elizabeth Reid, } *Assistants.*

Girls' School.—Jane E. Swallow, *Head Mistress.*

Mary J. Peebles, Louisa McNaughton, } *Assistants.*

Primary School.—Lucy H. Derick, *Head Mistress.*

Marion Taylor, *Assistant.*

These Schools can accommodate about 300 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of six and upwards, and give a thorough English education. Fees, Boys' and Girls' Model Schools, $1 to $1.50 per month; Primary School, 75c.; payable monthly in advance.

Passed the University Examination.

SESSION 1889-90.

FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Kneeland, Warren A., Montreal.
England, George P., Dunham, Q.
Girouard, Désiré H., Montreal.
Vipond, Thomas J., Montreal.
Harvey, Alfred E., Stanstead, Q.
Pelletier, Hormisdas Rémi, Marieville, Q
Ambrosse, John David Long, Montreal.

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged Alphabetically.)

Addy, G. A. B., St. John, N.B.
Ault, C. A., Oshkosh, Wis.
Bissett, C. B, River Bourgeois, N.S.
Bowes, E. J, Ottawa, Ont.
Broderick, E. J., B.A., Fredericton, N.B.
Burritt, C. H., B.A., Mitchell, Ont.
Campbell, J. M., Longueuil, Q.
Clarke, J. W., Tatamagouche, N.S.
Clune, P. J., Warkworth, Wis.
Coleman, A. H., Belleville, Ont.
Corbin, F. G., Bedford, N.S.
Curtis, I. B., Hartland, N.B.
Ellis, T. H., Pembroke, Ont.
Evans, D. J., Montreal.
Gorrell, A. S., Brockville, Ont.
Greene, T. J., Appleton, Ont.
Hamilton, H. D., B.A., Montreal
Harris, N. M., Ormstown, Q.
Hayes, John, B.A., Richmond, Q.
Inksetter, W. E., Copetown, Ont.
Irwin, A. F., Chatham, Ont.
Jenkins, W. E, Conquerall, N.S.
Jento, C. P., Mellville, O.
Kee, D. N., Fordyce, Ont.
Kemp, H. D., Montreal.
Leslie, A. C., Grand Forks, Dak.
Lewin, A. A., St. John, N.B.
Liddell, G. L., Cornwall, Ont.
Morphy, A. G., B.A., London, Ont.
Morris, O., Pembroke, Ont.
Mulligan, E. A., Aylmer, Q.
Murray, M. W., Beachwood, Ont.
Macdonald, M. S., Scotchtown, Q.
McEown, F., Winnipeg, Man.
McKay, H. H., Picton, N.S.
McKechnie, R. E., Winnipeg, Man.
McKee, G. L., Coaticook, Q.
McLellan, A. C., Indian River, P.E.I.
McManus, H.D., B.A., Frederickton, N.B
McMillan, G. A., St. Agnès de Dundee, Que.
Noble, C. T., Sutton, Ont.
O'Connor, C., Worcester, Mass.
Oliver, A. J., Cowansville, Q.
Patton, H. M, B.A., Winnipeg, Man.
Reid, J. T., Winnipeg, Man.
Robertson, W., Chesterfield, Ont.
Ross, James, Halifax, N.S.
Ross, H. R., Quebec.
Smith, W. D., Plantagenet, O.
Telfer, W. J., Burgoyne, Ont.
Thompson, F. E., Quebec.
White, D. DeJ., Montreal.
Wilson, W. A., Derby, N.B.
Williamson, H. M., Guelph, Ont.
Woodruff, E. H, B.A., St. Catharines, O.
Yorston, F. S., Truro, N.S.

PASSED THE PRIMARY EXAMINATION.

Berwick, G. A.
Binmore, J. E.
Bowen, G. A.
Boyce, B. F.
Brown, F. W. A.
Bruce, D. A.
Carmichael, H. B. W.
Carlaw, C. M.
Chabot, J. L.
Chipman, R. J.
Day, A. R.
Duncan, G. H.
Glendinning, R. T.
Graham, W. C. R.
Grant, H. A.
Halliday, V.
Hayes, P. J.
Henderson, James
Hogg, D. H.
Irwin, A. F.
Jameson, Thos.
Johnson, Albert
Lang, F. W.
Langley, A. F.
Lewin, A. A.
Mair, A. W.
Martin, C. F.
Massiah, H. B.
Meade, C. J.
Meikle, W. F.
Mackay, D. T.
McKenty, J. E.
McKenzie, R. T.
McKinnon, A. I.
McNally, H.
Paterson, Lamont
Phelan, E. D.
Robinson, B. E.
Rogers, W.
Shirriff, Geo. R.
Sinclair, O. W.
Smith, W. H.
Stewart, J. A.
Taylor, T. T.
Taylor, J. N.
Taplin, M. M.
Wade, A. S.
Walsh, W. E.
Walker, W. G.
Wasson, H. J
Yates, H. B.

FACULTY OF ARTS.

GRADUATING CLASS.

PASSED FOR THE DEGREE OF B.A.

In Honours.

(Alphabetically arranged.)

First Rank.—Botterell, H. Inez R.
Colclough, William F.
Derick, Carrie M.
Fraser, Daniel J.
McDougall, Robert.
Nicholls, Albert G.
Robertson, Andrew A.
Tory, Henry M.
Trenholme, Edward C.
Williams, Annie.

Second Rank.—Elliott, James A.

Ordinary.

(In order of Merit.)

McGill College.

Class I.—Abbott, Maude.
Davidson, Peers.
Binmore, Elizabeth.
Tolmie, Alexander.
Matthewson, George H.

Class II.—Sutherland, Hugh C.
Daley, James T.

Cameron, John Alexander. } equal.
Fry, Frederick M. }

Botterell, Jeanie T. }
Hall, Alexander R. } equal.
Mack, Silas W. }

Kinghorn, H. McL. } equal.
Moss, William Thos. D. }

Hunter, Alexander. } equal.
Swanson, Isaac J. }

Walsh, Alexander W.
McVicar, Donald.
Richardson, Peter L.
Reid, William D.
Parker, John.
McGregor, Alexander M.

Class III.—Macfarlane, Mira.
Paton, William E.
Finch, Calvin Wright.
Henderson, Mary.
Ross, Joseph J.

Aegra.—Scott, Sara B.

Morrin College.

Class I.—Brodie, Charles E.

Class II.—Craig, Hugh.
DesBrisay, Charles.

Class III.—Anderson, Duncan.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M.A. IN COURSE.

Cameron, Wellington A., B.A.
McGoun, Archibald, B.A.

ADMITTED TO THE DEGREE OF LL.D. "*Honoris Causâ.*"

The Right Honorable Frederick Arthur Stanley, Baron Preston, G.C.B., P.C., Governor General of Canada.

PASSED THE INTERMEDIATE EXAMINATION.

McGill College.

Class I.—Wood, Arthur B.
Kollmyer, W. Hector S.
Archibald, Edward W.
Barron, Robert H.
Robins, George D.
Pitcher, Ethelwyn.
Cushing, Harold B.
Ross, Robert O.
Boright, Mabel.

Class II.—Campbell, Kate W.
Taylor, James.
Parker, Edwin G.
Messenger, W. J.
Mitchell, R. J. W.
Tatley, Eleanor E. A.
Mackenzie, E. A.
Angus, Frances R.
Davey, R. George.
Raynes, Ethel G.
Jaquays, H. M

Class III.—Day, Maurice B.
Leach, Milda E.
Davidson, Clara.
MacLennan, Kenneth.
Colquhoun, Phillip.
Lyman, Helen W.
Smyth, Walter H.
Allen, James H.
Anderson, John D., *s.*
Blachford, Henry, *s.*
Brown, Daniel, *s.*
Carmichael, Saumarez, *s.*
Hunt, Lovisa E., *s.*
Macdonald, Minnie L, *s.*
Mewhort, Louise, *s.*
Pritchard, William S., *s.*
Russell, William, *s.*
Williams, Edward J., *s.*

s.—With supplemental Examination in one subject.

Morrin College.

Class I.—None.
Class II.—Drum, Lorne.
Class III.—Sloane, Samuel T.
McHarg, Robert F.
Tanner, John F. E.
Logie, Edward S., *s.*

St. Francis College.

Class I.—None.
Class II.—Fraser, Hortense C.

FACULTY OF APPLIED SCIENCE.

PASSED FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

Civil Engineering (*Advanced Course*).

IN ORDER OF MERIT.

RICHARD SMITH LEE, EDWARD ERNEST STUART MATTICE.

Civil Engineering (*Ordinary Course*).

IN ORDER OF MERIT.

RICHARD SMITH LEA, EDWARD ERNEST STUART MATTICE, ORRIN REXFORD, ALBERT HOWARD HAWKINS, WILLIAM SIMEON DENISON, CHARLES HERBERT ELLACOTT, CHESTER BOWDITCH REED.

Mechanical Engineering (*Advanced Course*).

GEORGE WALWORTH MOONEY.

Ordinary Course. (In order of merit).

PETER WHITEFORD REDPATH, GEORGE WALWORTH MOONEY.

Practical Chemistry (*Advanced Course*).

PERCY NORTON EVANS

Ordinary Course. (In order of merit).

PERCY NORTON EVANS, ARTHUR EDWARD SHUTTLEWORTH, WILLIAM SMAILL, SIDNEY CALVERT, ROBERT HENRY JAMIESON.

FACULTY OF VETERINARY SCIENCE.

PASSED FOR THE DEGREE OF D.V.S.

HONORIS CAUSA.

D. MCEACHRAN, F.R.C.V.S., V.S. Edinburgh, Dean of the Faculty.

FROM PREVIOUS SESSIONS.

(Arranged Alphabetically.)

Austin, R. D., V.S.
Baker, Professor Malcolm C., V.S., Montreal
Ball, E. P., V.S., Stanstead, P.Q.
Becket, Geo. C., V. S., Montreal
Bryden, Williamson, V.S., 36 Sudbury, St., Boston, Mass.
Clement, A. W., V.S., Baltimore, Md., U.S.
Couture, J. A., V S., Quebec
Craig, Wm., V S., Cornwall, Ont.
Daubigny, V. T., V.S., Montreal
Dawes, M. A., V. S., St. Anne de Bellevue
Dillon, Gerald P., V.S., Toronto, Ont.
Dyer, Charles E., V. S., Sutton, P. Q.
Goddard, A.J. G., V.S.
Hall, Wm. B., V.S., Quebec, P.Q.
Harris, A. W., V.S., Ottawa, Ont.
Harris, James G., V.S., Duluth
Hinkley, Nelson P., V.S., Buffalo, N.Y.
Hoare, Edward W., V. S. and M.R.C.V.S., Cork, Ireland
Jakeman, William, V.S., Halifax, N.S.
Lemay, Daniel, V.S.
Lyford, C. C., M.D., V.S., Minneapolis, Minn, U.S.
McCormick, Archibald, V.S., Ormstown P.Q.
McEachran, Professor Charles, V.S., Montreal
McLellan, Frederick W., V.S., Bridgeport, Conn., U. S.
McWhinnie, Hy., V.S., Troy, N.Y., U.S.
Miller, John A., V.S., Storm Lake, Iowa
Munro, Malcolm, V.S., Lancaster, Ont.
Mylne, R. C., V. S.
Ormond, Chas. H., V.S., Milwaukee, Wis.
Parker, John M., V S., Montreal
Sangster, Geo., V.S., Huntingdon, P.Q

Simpson, Martin W., V.S., Greenfield, Mass.
Skaife, F. W., V. S., Montreal
Smith, Henry D., V.S., Montreal
Thomas, Flavel S., M.D., Ph.D., V.S., Hanson, Mass.
Torrance, Frederick, B.A., V.S., Brandon, Man.
Wardel, Walter, V.S., Aqueduct St., Montreal
Wroughton, Theodore Ambrose, S.V. Fort McLeod, N.W.T.

SESSION OF 1889-90.

Crossman, Geo., E., Brushton, N.Y., U.S
Darling, Andrew, Montreal
Hayman, Julian M., Boissevain, Man.
McClue, John, Lynn, Mass., U.S.
Mills, Professor Wesley, M.A., M.D., —McGill College
Scanlan, Henry, Montreal
* Scott, James F., St. Mitchel, Montreal
Walsh, R. N., Huntingdon, P.Q.
Willyoung, Lester E., Albion, N.Y.

* Cannot receive the degree until he is of age.

Scholarships and Exhibitions.

SESSION 1889-90.

FACULTY OF ARTS.

I. SCHOLARSHIPS (Tenable for two years).

Year of Award.	Names of Scholars.	Subject of Examination.	Annual Value.	Founder or Donor.
1888	Tory, H. M.	Mathematics.	$125	W. C. McDonald.
1888	Nicholls, A. G.	Class.& Mod.Lang	125	W. C. McDonald.
1888	MacDougall, Robert.	Class.& Mod.Lang	120	Barbara Scott
1888	Sutherland, H. C.	Nat. Science.	125	W. C. McDonald.
1889	LeRossignol, W. J.	Class.& Mod.Lang	125	W. C. McDonald.
1889	McGregor, J. M.	Class.& Mod.Lang	120	Chas. Alexander.
1889	Gunn, W. T.	Nat. Science	125	W. C. McDonald.

II. EXHIBITIONS (Tenable for one year).

NAMES OF EXHIBITIONERS.	Academic Year.	Annual Value.	Founder or Donor.
Wood, Arthur B.	Second	$125	W. C. McDonald.
Kollmyer, W. H.	"	125	George Hague.
Robins, George D.	"	100	Major Mills.
*Fairclough, Elizabt.	First	100	Mrs. Redpath.
*Brown, James.	"	125	W. C. McDonald.

* The Governor-General's exemptions from Sessional Fees for four years were awarded to the students thus indicated.

Bursaries were awarded as follows:—To *Hunter, J. N. (1st year), a McDonald Bursary of $62.50; to *White, A. H. (1st year), a McDonald Bursary of $62.50.

Prizes, Honours and Standing.

SESSION 1889-90.

FACULTY OF LAW.

GRADUATING CLASS.

First Rank Honours and Elizabeth Torrance Gold Medal:

Warren Anderson Kneeland.

First Rank Honours and Second Prize for General Proficiency:

George Prevost England.

First Rank Honours:

Désiré Howard Girouard.
Thomas John Vipond.

Second Rank Honours:

Alfred Eugene Harvey.

STANDING IN THE CLASSES.

INSURANCE, AFFREIGHTMENT AND SURETYSHIP.—Prof. TRENHOLME.

First Class.—Kneeland, Vipond, England, Girouard.
Second " None.
Third " Harvey, Ambrosse, Pelletier.

CONSTITUTIONAL LAW.—Professor ARCHIBALD.

First Class.—England, Kneeland, Harvey.
Second " Girouard.
Third " Pelletier, Ambrosse, Vipond.

ROMAN LAW.—Professor HUTCHINGSON.

First Class.—Girouard, Vipond, England, Kneeland.
Second " Ambrosse, Harvey, Pelletier.

CIVIL LAW. (*Marriage Covenants, Gifts, and Wills*).—Professor ROBIDOUX.

First Class.—Kneeland, Harvey, Girouard, Vipond, England, Pelletier.
Second " Ambrosse.

COMMERCIAL LAW. (*Merchant Shipping and Banking*).—Professor DAVIDSON.

First Class.—Kneeland, Girouard, England.
Second " Ambrosse, Pelletier, Vipond.
Third " Harvey.

CIVIL PROCEDURE.—Professor McGoun.

First Class.—England, Pelletier.
Second " Vipond.
Third " Harvey, Girouard, Kneeland, Ambrosse.

CIVIL LAW.—Assistant Professor Fortin.

First Class.—Kneeland, Girouard, Vipond, Pelletier, Harvey, England.
Second " None.
Third " Ambrosse.

SECOND YEAR.

First Rank Honours and Prize.
Francis Joseph Hatchette.

First Rank Honours and Prize.
Frederick William Hibbard.

PASSED THE SESSIONAL EXAMINATION.

Hatchette, Francis J., Montreal.
Hibbard, Frederick W., Dunham, Que. } equal.
Geoffrion, Victor, Montreal.

RANKING IN THE CLASSES.

INSURANCE, AFFREIGHTMENT AND SURETYSHIP.—Professor Trenholme.

First Class.—Hibbard.
Second " Hatchette.
Third " Geoffrion.

CONSTITUTIONAL LAW.—Professor Archibald.

First Class.—Geoffrion.
Second " Hibbard, Hatchette.

ROMAN LAW.—Professor Hutchinson.

First Class.—Hatchette, Hibbard.
Second " None.
Third " Geoffrion.

CIVIL LAW. (*Marriage Covenants, Gifts and Wills*).—Professor Robidoux.

First Class.—Hatchette and Geoffrion, equal.
Second " Hibbard.

COMMERCIAL LAW.—Professor Davidson.

First Class.—Hatchetté, Hibbard.
Second " None.
Third " Geoffrion.

CIVIL PROCEDURE.—Professor McGoun.

First Class.—None.
Second " Hibbard.
Third " Geoffrion, Hatchette.

CIVIL LAW.—Assistant Professor Fortin.

First Class.—Hatchette, Hibbard.
Second " Geoffrion.

FIRST YEAR.

First Rank Honours and Prize.—Percy C. Ryan.

Second Rank Honours and Prize.—Harry V. Truell.

PASSED THE SESSIONAL EXAMINATION.

Ryan, Percy C., Ottawa.
Truell, Harry Valorous, Stanstead, Q.
Hutcheson, Robert Bennett, Montreal.

STANDING IN CLASSES.

INSURANCE, AFFREIGHTMENT AND SURETYSHIP.—Professor Trenholme

First Class.—Ryan.
Second " None.
Third " Truell, Hutcheson.

CONSTITUTION—Professor Archibald.

First Class.—None.
Second " Ryan, Truell.
Third " Hutcheson.

ROMAN LAW.—Professor Hutchinson.

First Class.—Hutcheson.
Second " Truell.
Third " Ryan.

CIVIL LAW.—Professor Robidoux.

First Class.—Ryan, Truell.
Second " None.
Third " Hutcheson.

COMMERCIAL LAW—Professor Davidson.

First Class.—Ryan.
Second " Truell.
Third " Hutcheson.

CIVIL PROCEDURE—Professor McGoun.

First Class.—None.
Second " Ryan.
Third " Hutcheson, Truell.

CIVIL LAW—Assistant Professor Fortin.

First Class.—Ryan, Hutcheson, Truell.

FACULTY OF MEDICINE.

The Holmes Gold Medal, for the best Examination in all the Branches comprised in the Medical Curriculum. — Robert Edward McKechnie, of Winnipeg, M.

The Prizes for the best Examination in the Final Branches.—Edward John Bowes, Ottawa, Ont., Michael W. Murray, Beachwood, Ont., equal.

The Clemesha Prize in Clinical Therapeutics.—Alfred Henry Coleman, Belleville, Ont.

The Prize for the best Examination in the Primary Branches.—James Henderson, Warkworth, Ont., and Thomas Jameson, Buffalo, N. Y., equal.

The Sutherland Gold Medal.—Thomas Jameson, Buffalo, N.Y.

The following, arranged in order of merit, deserve honorable mention :—

In the Primary Branches.—Chabot, J.L., Day, A.R., Massiah, H. B. W., Martin, C. F., Wasson, H. J., Hayes, P. J., Boyce, B. F., Clipman, R. J., Lang, F. W.

In the Final Branches:—Smith, W. D., Inksetter, W. E., Yorston, F. S., Irwin, A. F., Coleman, A. H., Hayes, John, Broderick, E. J., Noble, C. T., Wilson, W. A., Evans, D. J.

Professors' and Demonstrators' prizes :—

Botany.....Robt. Wilson, Montreal.
Senior Anatomy.....James Henderson, Warkworth.
Junior " .....J. W. Scane.

Passed in Anatomy.

Anderson, N., Philimore, R. H., Girdlestone, C. W., Jack, du Vernet.

Passed in Chemistry.

Coburn, A. D., Cooper, M. A, Jack, du Vernet, Walsh, T. N., Girdlestone, C. W., Gunter, F. B., Hume, G. L., Martin, S. H., Whyte, J. T., Peake, J. P., Thompson, John.

Passed in Practical Chemistry.

Anderson, Norman, Ault, C. R., Brousseau, J. A., Dupuis, D. R., Ellis, W. L., Fulton, J. A., Girdlestone, C. W., Gunter, F. B., Hume, G. L., King, H. S., Kinghorn, H. M., Lindsay, W, Martin, S. H., McKenzie, R. J., McLennan, D. A., McLeod, H. S., Peake, J. P., Richards, S., Thompson, John, Tremblay, L., Walsh, T. N.

Passed in Physiology.

Akerley, A. W. K., Anderson, N., Coburn, A. D., Jack, du Vernet, Martin, S. H., Outwater, S. W., Peake, J. P., Travers, J. B., Thompson, John, Walsh, T. N.

Passed in Hygiene.

Addy, G. A. B., Ault, C. A., Beers, A. H., Bissett, C. P., Boderick, E. J. Bowes, E. J., Burritt, C. H., Clarke, J. W., Clune, P. J., Corbin, F. G., Curtis, I. B., Ellis, T. H., Gorrell, A. G., Hayes, John, Hayes, Joseph, Irwin, A. F., Jenkins, W. E., Jento, C. P., Kee, D. N., Lewin, A. A., Morphy, A. G., Morris, O., Mulligan, E. A., Murray, M. W., Macdonald, M. S, McEown, F., Mackay, H., H., McKechnie, R. E., McKee, G. L., McLellan, A. C., McManus, H. D., Noble, C. T., O'Connor, C., Patton, H. M, Reid, J. T., Ross, Jas., Ross, H. R., Smith, W. D., Telfer, W. J., Williamson, H. M., Wilson, W. A.

Passed in Pharmacology and Therapeutics.

Alexander, W. W., Bennie, R., Bowie, R. A., Brouse, J. E., Brown W. A. Busby, J., Calkin, B. H, Carlaw, C. M, Clarke, J., Clemesha, J. C., Dewar, A., Farwell, W. A., Fletcher, R. W., Fulton, J. A., Gibson, R. J., Grafton, E. A., Hamilton, W. F., Harrison, J D., Hattie, W. H., Heweston, J., Holden, D. B., Internoscia, A., Irwin, A. F., Kelly, C. I., Keir, E. J., Lambert, E. M., Love, A., Lovering, W., Mader, A. I., Main, C. G., Martin, M. McL., Moore, J. M., Morrow, W. S., McCann, A. E. A., McCrimmon, A. A., McGauran, G. F., McGuire, J. C., McMillan, J. H., MacPhail, J. A., Neill, J., Robertson, E. A., Robertson, T. F., Sinclair, O. W., Smith, C. F., Smith, T. H., Sparling, A. J., Spier, J. R, Tunstall C. A., Troy, W., Watson, N. M., Webster, R. E., Williamson, W. P.

Passed in Pathology.

Alexander, W. W., Bennie, R., Bowie, R. A., Brown, W. A., Busby, J., Calkin, B. H., Carlaw, C. M., Clarke, J., Clemesha, J. C., Dewar, A., Farwell, W. A., Fletcher, R. W., Gibson, R. J., Grafton, E. A., Hamilton, W. F., Harrison, J. D., Hattie, W. H, Heweston, J., Holden, D. B., Internoscia, A, Irwin, A. F., Kelly, C. I., Keir, E. J., Lambert, E. M., Love, A., Lovering, W., Mader, A. I., Main, C. G., Martin, M. McL., Moore, J. M., Morrow, W. S., McCann, A. E. A., McCrimmon, A. A, McGuire, J. C., McMillan, J. H., MacPhail, J. A., Neill, J., Robertson, E. A., Robertson, T. F., Shirriff, G., Sinclair, O. W., Smith, C. F., Smith, T. H., Sparling, A. J., Spier, J. R., Tunstall, C. A., Troy, W., Waston, N. M, Webster, R. E., Williamson, W. P.

Passed in Medical Jurisprudence:

Alexander, W. W., Bennie, R., Bowie, R. A., Brouse, J. E., Brown, W. A., Busby, J., Calkin, B. H., Carlaw, C. M., Clarke, J., Clemesha, J. C., Dewar, A., Farwell, W. A., Fletcher, R. W., Fulton, J. A., Gibson, R. J., Grafton, E. A., Hamilton, W. F., Harrison, J. D., Hattie, W. H., Heweston, J., Holden, D. B., Internoscia, A., Irwin, A. F., Kelly, C. I., Keir, E. J, Lambert, E. M., Love, A., Lovering, W., Mader, A. I., Main, C. G., Martin, M. M. McL., Moore, J. M., Morris, O., Morrow, W. S., Mackay, H. H., McCann, E. A., McCrimmon, A. A., McGauran, G. F., McGuire, J. C., McMillan, J. H., MacPhail, J. A., Neill, J., Richards, S., Robertson, E. A., Robertson, T. F., Shirriff, G. R., Sinclair, O. W., Smith, C. F., Smith, T. H., Sparling, A. J., Spier, J. R., Tunstall, C. A., Troy, W., Waston, N. M., Webster, R. E., Williamson, W. P.

Passed in Histology.

Aylen, E. D., Barrett, H. H., Blunt, H. W., Bostwick, W. E., Brown, J. A., Cameron, J. D., Campbell, Robt., Carroll, R. W , Cooper, M. A., Deeks, W. E., Dewar, G. F., Dewar, A. T., Du Vernet, Ed., Fleming, G. W., Fulton, J. A., Girdlestone, C. W., Goff, H. N., Gunter, F. B., Haight, Mortimer, Hewetson, S. W., Hume, G L., Internoscia, A., Jamieson, W. H., Lambly, W. O., Lawrence, J. W., Lewis, J. T., Lindsay, W., Livingstone, H. A , Masten, C. H., McKenzie, S. R., McArthur, A. D., McIntyre, J. D , MacKay, R. B., McLennan, D., McLennan, K., McMillan, Wallace, McMorine, R. F., Ogden, C. L., Patterson, W., Robinson, B. E., Rorke, R. F., Scane, J. W., Semple, E. J., Seguin, J. W. A., Shaw, G. F., Sinclair, O. W., Smith, W. H., Trenholme, G A., Wade, A. S., Walker, J. L., Walsh, T. N., Wilson, Robt., Wilson, R. D., Yearwood, C. A., Young, W. E.

Passed in Botany.

Anderson, N., Aylen, E. D., Barrett, H. H., Bostwick, W. E., Brown, J. A., Cameron, J. D., Campbell, Robt., Carroll, R. W., Cooper, M. A., Johnston, A., Lambly, W. O., Lawrence, J. W., Lewis, J. T., Lindsay, Wm., Livingston, H. A., Masten, C. H., Mathieson, R., Mills, W. C., Rodger, D. A., Ropke, R. F , Robinson, H. J., Scammell, J. H., Scane, J. W., Seaton, J. S., Semple, E. J., Seguin, J. W. A , Shaw, Thos. P.

FACULTY OF ARTS.

GRADUATING CLASS.

B.A. Honours in Mathematics and Natural Philosophy.

Tory, Henry M.—First Rank Honours and Anne Molson Gold Medal.

B.A. Honours in Classics.

Nicholls, Albert G.—First Rank Honours and Chapman Gold Medal.
Colclough, William F.—First Rank Honours.

B.A. Honours in Natural Science.

Derick, Carrie M.—First Rank Honours and Logan Gold Medal.
Robertson, Andrew A.—First Rank Honours and Medal Prize.
Botterell, H. Inez R.—First Rank Honours.
Trenholme, Edward C.—First Rank Honours.

B.A. Honours in Mental and Moral Philosophy.

Williams, Annie.—First Rank Honours and Prince of Wales Gold Medal.
McDougall, Robert.—First Rank Honours.
Fraser, Daniel J.—First Rank Honours.
Elliott, J. A.—Second Rank Honours.

Gold Medal and Special Certificates for First Rank General Standing.

Abbott, Maude.—Special Certificate, Lord Stanley Gold Medal.
Davidson, Peers.—Special Certificate.
Binmore, Elizabeth.—Special Certificate.
Tolmie, Alexander.—Special Certificate
Matthewson, George H.—Special Certificate.

Morrin College.

Brodie, Charles D.—Special certificate.

THIRD YEAR.

LeRossignol, Walter J. J.—First Rank Honours and Prize in Mental and Moral Philosophy; First Rank General Standing; Prizes in Classics and Zoology.
Warne, James F.—First Rank Honours in Natural Science; First Rank General Standing; Prize in English and Rhetoric.
Warne, William A.—First Rank Honours in Natural Science.
Pidgeon, George C.—Second Rank Honours in English Language, Literature and History.
Gunn, William T.—First Rank General Standing.
Pattison, Mary L.—First Rank General Standing; Prize in Zoology.
Oliver, William.—First Rank General Standing.
Robins, Lilian B.—First Rank General Standing; Prize in Classics.
McGregor, John M.—First Rank General Standing; Prize in Classics.
Moffatt, Eva L.—First Rank General Standing; Prizes in Latin and French.
McDougall, Gordon W.—First Rank General Standing.
Ellenwood, William R.—First Rank General Standing; Prize in Grammar.
Goff, H. N.—First Rank General Standing.
McAlpine, John J.—Prize in Hebrew.

Passed the Sessional Examinations.

LeRossignol, Gunn, Pattison; Oliver and Robins, equal McGregor (J. M.) and Warne (J. F.), equal; Moffatt, McDougall; Ellenwood and Goff, equal; Hall (B.) and Smith and Whyte (G.), equal; Hall (R. S.); McAlpine and McGregor (E. B.) and Moore (L.), equal; Young; McLeay and McMillan and Warne (W. A.), equal; Cole and Tees, equal; Pidgeon and Russell equal; Whyte (J. T.) Hipp McLeod, Dobson, Craik.

SECOND YEAR.

Wood, Arthur B.—(High School, St. Johns, P.Q.)—First Rank Honours and Prize in Mathematics; First Rank General Standing; Prize in Classics.
Robins, George D.—(High School, Montreal.)—First Rank Honours and Prize in Mathematics; First Rank General Standing.
Kollmyer, W. Hector S.—High School, Montreal.)—First Rank General Standing; Prize in Logic.

Archibald, Edward W.—(High School, Montreal.)—First Rank General Standing; Prizes in French and German.

Barron, Robert H.—(Lachute Academy, P.Q.)—First Rank General Standing; Prize in Botany.

Pitcher, Ethelwyn.—(High School, Morrisburg, Ont.)—First Rank General Standing; Prizes in Logic and English.

Cushing, Harold B.—(High School, Montreal.)—First Rank General Standing.

Ross, R. O. R.—(Baddeck Academy, C.B.)—First Rank General Standing; Prize in Hebrew.

Boright, Mabel.—(Sutton Academy, P.Q.)—First Rank General Standing; Prizes in French and German.

Campbell, Kate M.—(Girls' High School, Montreal.)—Prize in Classics.

Messenger, William J.—(Private Tuition,)—Prize in English.

Tatley, Eleanor.—(Private Tuition.)—Prize in Botany.

Passed the Sessional Examinations.

Wood, Kollmyer, Archibald, Barron, Robins, Pitcher, Cushing, Ross (R. O.), Boright, Campbell (K.), Taylor, Parker, Messenger, Mitchell, Tatley, Mackenzie, Angus, Davey, Raynes, Jaquays, Day, Leach, Davidson, Maclennan, Colquhoun, Lyman, Smyth, Allen. [The following *arranged alphabetically*]—Anderson, Blachford, Brown, Carmichael, Hunt, Macdonald, Mewhort, Pritchard, Russell, Williams.

FIRST YEAR.

Brown, James T.—(Huntingdon Academy, P.Q.)—First Rank Honours and Prize in Mathematics.

Fairclough, Lizzie M.—(Hamilton Collegiate Institute).—First Rank Honours in Mathematics.

Jordan, John E.—(Coaticook Academy, P.Q.)—Second Rank Honours in Mathematics.

White, Alfred H.—(Peoria High School, Ill., U. S.)—First Rank General Standing; Prizes in Classics, and Chemistry and German.

Hickson, Joseph W. A.—(Eliock School, Montreal.)—First Rank General Standing; Prize in French.

Mansur, Charles.—(Stanstead Wesleyan College).—First Rank General Standing.

James, Agnes S.—(McGill Normal School).—First Rank General Standing. Prizes in Latin and History, and in English Literature.

Gordon, John S.—(Prince of Wales' College, Charlottetown, P. E. I.)—First Rank General Standing; Prize in Hebrew.

LeRossignol, Mary A.—(Girls' High School, Montreal).—Prize in History.

Jackson, Annie L.—(Miss Symmers and Smith's School, Montreal.)—Prizes in French and German.

Reay Janet.—(McGill Normal School).—Prize in Chemistry.

Passed the Sessional Examinations.

White, Hickson, Mansur, James, Gordon, Killaly, Gurd, LeRossignol ; Fairclough and Townsend, equal ; Brown (J. T.), Mahaffy, Jackson, Millar, Reay, Jordan, Seymour, Honeyman, Thompson, Allen, Mills, Smith, Hodgins, Skeels, Stearns, Brown (C. L.), Ballantyne ; Hutchison and Lee, equal ; Internoscia, Brittain, Adams (J. R.) *s*, Botterell *s*, Donahue *s*, Hunter *s*, Ireland *s*, McGerigle *s*, Munn *s*, Naylor *s*.

s.– With Supplemental Examination on one subject.

SPECIAL PRIZES, &c.

Anne Molson Mathematical Prize ($64)—(Examination held in September, 1889) Tory H. M., Fourth Year Student.

Professor's Prize for Collection of Insects—McDougall Robert, Fourth Year Student.

Professor's Prize for Collection of Fossils—Botterell (H. Inez R.), Fourth Year Student.

Professor's Prize for Collection of Lepidoptera—Trenholme Edward C., Fourth Year Student.

Charles G. Coster Memorial Prize—To that undergraduate of the First Year from the Maritime Provinces who, in the opinion of the Faculty, has passed the most satisfactory Sessional Examination.—Gordon, John S. Alberton, P. E. I.

Note.—The prizes in the Donalda department are from the income of the Hannah Willard Lyman Memorial Fund.

SCHOLARSHIPS—TENABLE FOR TWO YEARS. (AWARDED SEPT., 1889.)

Third Year—*Classical and Modern Language Scholarships.*—* LeRossignol W. J. ; ** McGregor J. M.—*Natural Science Scholarship.*—Gunn W. T.

EXHIBITIONS—TENABLE FOR ONE YEAR.

Second Year.—*Wood, Arthur B. (St. Johns' High School, P.Q.), † Kollmyer W. H. (High School, Mtl.) ; § Robins George D. (High School, Mtl.)

First Year.—Higher Entrance and Exhibition Examinations.

Class I.—1. ‡ Fairclough, Elizabeth, (Hamilton Coll. Inst.) *Exhibition.*
2. *Brown, James, (Huntingdon Academy.) *Exhibition.*

Class II.—§§ Hunter, J. N., Clifton College, England.
§§ White, A. H., Peoria High School, Ill., U. S.

(*Bursaries* were granted to the candidates in Class II.)

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* Value of Scholarship or Exhibition, $125 yearly ; founder, W. C. MacDonald, Esq.
† Value, $125 yearly ; donor, George Hague, Esq.
* Value, $120 yearly ; founder, Charles Alexander, Esq.
** Value, $100 yearly ; founder, Major Mills.
‡ Value, $100 yearly ; founder, Mrs. Redpath
§§ Value of each Bursary, $62.50 ; donor, W. MacDonald, Esq.

SESSIONAL EXAMINATIONS, 1890.

McGILL COLLEGE.

*In the following list * indicates Partial or Occasional Students.*

GREEK.

B.A. ORDINARY.—*Class I.*—Nichols, Colclough, Cameron, Abbott, Binmore, Fry, Daley. *Class II.*—Mathewson, Tolmie, Parker, Moss, Hunter, Reid, Mack. *Class III.*—Walsh, Henderson, Swanson, Finch, Richardson, Ross.

THIRD YEAR.—*Class I.*—LeRossignol (W. J.), (*Prize*); Gunn, Pattison, Robins (Lilian B.), McGregor (John M.), Hall (R. S.); Ellenwood and Oliver, equal. *Class II.*—Hipp, Moore (Levi), Young, Tees, McGregor (E. B.). *Class III.*—Pidgeon, McAlpine; Cole and Russell, equal; McLeod, Holden, Guthrie, Dobson, Craik.

SECOND YEAR.—*Class I.*—Archibald and Barron and Wood, equal; Kollmyer, Robins, Parker, Campbell (K. M.), Taylor, Messenger. *Class II.*—Ross (R O), Cushing, Mitchell, Day, Blachford; Jaquays and Pritchard, equal. *Class III.*—Sadler; Brown and Colquhoun and Mackenzie, equal; Davis and Robertson, equal; MacLennan; Carmichael and Smyth, equal; Allen, Davey, Russell, Hunt; Anderson and Graham and Jekill, equal.

FIRST YEAR.—*Class I.*—White, Townsend, Gurd, Hickson, James, Jordan, Mansur, Killaly, Mahaffy; Brown (J. T.) and Fairclough, equal. *Class II.*—Millar; Allen and Honeyman and Reay, equal; Carter, Donahue, Naylor, Skeels, Hunter, Thompson, Brown (C. L.); Byers and Gordon and Ireland and Stearns, equal. *Class III.*—McGerrigle, McVicar (R. M.), Hodgins, Hutchison, Brittain, Fraser, Adams (J. R.), Lee; MacKeracher and Munn, equal; Ballantyne; Internoscia and Smith, equal. *Prize.*—White.

LATIN.

B A. ORDINARY—*Class I.*—Nichols; Colclough and Williams, equal; Abbott and Binmore, equal; Hall (Alex. R.), Tolmie, Trenholme; Botterell (Jeanie T.) and Kinghorn, equal. *Class II.*—Davidson, Moss; Fry and Parker, equal; Hunter. *Class III.*—Paton, Macfarlane, Henderson.

THIRD YEAR.—*Class I.*—Le Rossignol (W. J.), (*Prize*); McGregor (Jno. M.), (*Prize*); Moffatt (*Prize*); Ellenwood and McMillan, equal; Warne (Jas. F.), Smith, Moore (Levi); Hall (R. S.) and McGregor (E. B.) and Robins (Lilian B.), equal. *Class II.*—MacDougall, Hall (Bessie); Oliver and Whyte (Geo.) and Young, equal. *Class III.*—Guthrie, McLeay, Warne (Wm. A.).

SECOND YEAR.—*Class I.*—Wood, Barron; Archibald and Kollmyer, equal; Cushing, Campbell (K. M.), Boright, Robins (G. D.), Parker, McKenzie; Pitcher and Ross (R. O.), equal. *Class II.*—Mitchell, Taylor, Messenger, Raynes; Day and Tatley, equal; Jaquays, Angus; Mewhort and Sadler,

equal; Johnson (N.); Carmichael and Leach, equal. *Class III.*—Davidson and Hunt and McDonald, equal; Russell, Anderson; Colquhoun and McLennan, equal; Brown and Davey and Ellicott and Smyth, equal; Allen, Lyman; Ross (J. K.) and Williams, equal; Pritchard, Campbell (R. K.), McCoy. *Prizes.*—Wood and Campbell (K.M.)

SECOND YEAR.—(*Latin Prose Composition.*)—*Class I.*—Wood; Archibald and Kollmyer, equal; Robins (G. S.); Barron and Campbell (K. M.), equal; Pitcher; Boright and Cushing and Taylor, equal. *Class II.*—Mewhort, Parker, Day, Ross (R. O.); Johnson (N.) and Raynes, equal; Angus; Leach and McKenzie and Messenger, equal; Anderson, McDonald. *Class III.*—McLennan; Davidson and Ellicott and Mitchell and Tatley, equal; Hunt, Pritchard, Jacquays, Davey, Blachford, Brown, Carmichael; McCoy and Smyth and Williams, equal; Allen, Lyman, Colquhoun, Graham.

FIRST YEAR.—*Class I.*—Hendrie; James and White, equal; Fairclough, Seymour; Hickson and LeRossignol, equal; Skeels; Mahaffy and Mansur, equal. *Class II.*—Allen, Gurd, Jackson, Killaly; Millar and Townsend, equal; Botterell and Honeyman, equal; Carter, Brown (J. T.); Ballantyne and Donahue and Hunter, equal; Jordan, Naylor, Gordon, Reay. *Class III.*—Thompson, Hutchison; Brittain and Ireland, equal; Smith and Stearns, equal; Brown (C. L.), McDonald, Mills, Byers, Adams (J. R.), Lee, McVicar (R. M.), McKeracher; Hodgins and Internoscia, equal. Boyd, McGerrigle.
Prizes.—James and White.

GREEK AND ROMAN HISTORY.

FIRST YEAR.—*Class I.*—Botterell and James, equal; LeRossignol, Gurd; Gordon and Killaly, equal. *Class II.*—Brown (J. T.) and White, equal; Honeyman and Mahaffy and Mansur, equal; Lee, Hunter, Smith, Jordan; Allen and Millar and Townsend, equal. *Class III.*—Hutchison and McVicar (A.) and Seymour, equal; Hickson, Brown (C. L.), Donahue Brittain; Gerrie and Ireland and McVicar (R. M.) and Munn, equal; Naylor, Mills; Ballantyne and Internoscia and McGerrigle, equal; Jackson, Stearns, Skeels, Thompson, McDonald, Vipond, Hodgins, Reay, Fraser.
Prizes.—James and Le Rossignol.

HONOUR EXAMINATIONS IN CLASSICS.

B.A.—First Rank Honours and Chapman Gold medal: Nichols, Albert G.
First Rank Honours: Colclough, Wm. E.

MENTAL AND MORAL PHILOSOPHY.

B.A. ORDINARY.—(*Moral Philosophy.*)—*Class I.*—Williams, Fraser; MacDougall (R.) and Abbott, equal; Elliott (J. A.), Binmore, Cameron; Davidson and Sutherland, equal; Swanson, Mack, Paton, Botterell (J.T.);

Kinghorn and Richardson, equal. *Class II.*—Hall (A. R.) and McGregor, equal; Tolmie, Reid, Parker, Fry, Hunter, McVicar; *Judge, Henderson, Walsh, Macfarlane, Mathewson. *Class III.*—*Moore (C.), Finch, *Mitchell, Ross.

THIRD YEAR.—(*Mental Philosophy.*)—*Class I.*—Gunn and LeRossignol, equal; *Hendrie; Hall (B.) and Oliver, equal; *Clendinnen, Whyte (G.), Moffatt. *Class II.*—Ellenwood, Russell, Whyte (J.); Goff and Hall (R. S.), equal; MacDougall (G. W.) and Pidgeon, equal. *Class III.*—*Flagg, McAlpine, Craik, *Massicotte, *Chantler, *Moore (S.).
Prize.—Le Rossignol.

SECOND YEAR.—(*Logic*).—*Class I.*—Kollmyer and Wood, equal; Barron and Pitcher, equal; Archibald; Davey and Robins and Ross, equal; Campbell (K.) and Mackenzie, equal; Brown and Boright, equal; McKinley and Mitchell and Tatley, equal. *Class II.*—Messenger and Russell, equal; Monk, Macdonald, Angus, Cushing; Davis and Mewhort, equal; Davidson; Anderson and Day and Raynes and Taylor, equal. *Class III.*—*Elliott; Blachford and MacLennan, equal; Burnett and Sadler, equal; Williams, Parker, Logan, Allen: Colquhoun and Morris and Ross, equal; *Burke and Graham and Leach, equal; Carmichael and Hunt, equal; Jaquays; Lyman and Pritchard and *Tener, equal; *Campbell (E. M.); Grisbrook and Jekill, equal; Campbell (R. F.) and *Murray, equal; Robertson and Smyth, equal.
Prizes.—Kollmyer, Pitcher.

EUROPEAN HISTORY.

B.A. ORDINARY.—*Class I.*—Davidson and Mack, equal: Sutherland, Kinghorn. *Class II.*—Tolmie; Daley and McGregor, equal; Botterell (J. T.) and Hall and Hunter, equal; Reid, McVicar, Swanson; Macfarlane and Moss, equal; Parker. *Class III.*—Paton, Walsh, Henderson, Finch.

B.A. Additional in English Lit. and Hist. Class II.—Mack.

ENGLISH LITERATURE AND RHETORIC.

THIRD YEAR.—*Class I.*—Warne (J. F.). (*Prize*): McMillan and Smith, equal. *Class II.*—Pidgeon, Warne (W. A.); Holden and Moore (L.), equal. *Class III.*—Moore (S.).

THIRD YEAR.—*Additional in English Lit. and Hist. Class II.*—Pidgeon.

ENGLISH LITERATURE AND HISTORY.

SECOND YEAR.—*Class I.*—Messenger (*Prize*), Kollmyer, Archibald, Robins, Pitcher (*Prize*); Barron and Mitchell, equal: Raynes, Wood: Macdonald and Parker, equal. *Class II.*—Blachford and Cushing and Ross (R O R.) and Taylor, equal; Boright and Campbell (K.), equal; Russell, Mackenzie, MacLennan, Jaquays, Angus, Day, Sadler. *Class III.*—Davey; Campbell (R.) and Tatley, equal; Anderson and Ross (J. K.), equal; Colquhoun, Pritchard; Leach and Mewhort, equal; Davis and Lyman, equal; Tener, Allen, Carmichael, Davidson, Grisbrook, Smyth, Williams.

ENGLISH LITERATURE.

First Year.—*Class I.*—James (*Prize*), Killaly; Hickson and Seymour (M.), equal; Le Rossignol; Brown (J. T.) and Gurd, equal; Botterell (F. A.) and Cleland, equal. *Class II.*—Brown (J.) and Macdonald, equal; Miller, Mills, Gordon; Elliott and Honeyman and Jackson and Lee and Thompson and White, equal; Allen (G. F.) and Hodgins, equal; Internoscia and McVicar (A.) and Mansur, equal; McLean, Jordan. *Class III.*—Byers and Coffin and Hutchison and Munn and Townsend, equal; Mahaffy and Skeels, equal; Fairclough, McGerrigle, Fraser (F.C.), Naylor; Ballantyne (J.) and Vipond, equal; Reay; Hunter and Morrison, equal; Brown (C L) and Ireland, equal; Adams (J. R.) and Stearns, equal; Brittain and MacLaren, equal; Smith, Donahue, Boyd.

MECHANICS AND HYDROSTATICS.

B.A. Ordinary.—*Class I.*—Sutherland, Moss, McVicar, Tolmie, Hunter, Binmore. *Class II.*—Cameron and Botterell (J. T.), equal; Abbott, Daley, Walsh. *Class III.*—Reid, Macfarlane, Parker, Ross, Paton, Henderson.

Third Year.—*Class I.*—Robins, Ellenwood, Oliver, Goff; Macdougall and Pattison, equal; Warne (J. F.). *Class II.*—Moffatt, Young, Moore (L.), Whyte (G). *Class III.*—McGregor (E. B.) and McLeay and Warne (W. A.), equal; Cole and McLeod, equal; McMillan, Whyte (J. T.); Hall (B.) and Smith, equal; Tees, Hall (R. S.), Dobson, Hipp.

ASTRONOMY AND OPTICS.

B A. Ordinary.—*Class I.*—Tory; Mathewson and Walsh, equal; Abbott and Davidson, equal; Tolmie, Binmore. *Class II.*—Hunter and McVicar, equal; Parker, Fry, Sutherland. *Class III.*—Mack, Kinghorn; Elliott, (J. A.) and Hall, equal; Ross, Paton.

Third Year.—*Class I.*—Oliver, Pattison, McLeay, Robins. *Class II.*—None. *Class III.*—Dobson, Guthrie, McLeod, Hipp.

EXPERIMENTAL PHYSICS. *Light and Heat.*

B.A. Ordinary.—*Class I.*—Tory, Sutherland; Daley and Davidson, equal; Tolmie, Ross, Mathewson. *Class II.*—Walsh, Kinghorn, Moss, Reid. *Class III.*—Cameron, McVicar, Fraser.

Third Year.—*Class I.*—Oliver, McGregor, MacDougall, Goff, Cole, Whyte (George), * Ferguson. *Class II.*—Tees, McLeod. *Class III.*—Holden, Whyte (Jas. T.); Dobson and Guthrie, equal.

GEOMETRY AND ARITHMETIC.

Second Year.—*Class I.*—Cushing and Ross (R. O. R.), equal; Taylor; Barron and Kollmyer and Robins and Wood, equal; Jaquays; Archibald and Davey, equal; Pritchard and Pitcher, equal; Mitchell; Boright and Campbell (K.), equal; McCoy. *Class II.*—Sadler, Brown, Parker,

Tatley, Anderson, Allen; Angus and MacKenzie, equal. *Class III.*—Day, Graham, Macdonald; Leach and Messenger and Williams, equal; Davis; Blachford and Russell, equal; Lyman, Smyth, Ellicott, Morris, Hunt, Colquhoun; Jekill and Raynes, equal; Carmichael, Campbell (R.), Robertson, MacLennan, Davidson.

First Year.—*Class I.*—Fairclough, Killaly, McVicar (A.), Gordon, Hickson, Mansur; LeRossignol and Reay, equal; Jordan; Allen and James, equal; Mahaffy and White, equal; Smith, Hodgins, Brown (J.), Gurd, Thompson. *Class II.*—Honeyman and McGerrigle and Townsend, equal; Jackson. *Class III.*—McVicar (R.); Hunter and Millar, equal; Fraser and Ireland, equal; Brown (C.L.) and Lee and Stearns, equal; Internoscia, Naylor, Hutchison; Adams (J.B.) and Ballantyne (J.) and Botterell and Skeels, equal; Boyd, Seymour, Donahue; Gerrie and Mills and Munn, equal; Brittain.

TRIGONOMETRY AND ALGEBRA.

Second Year.—*Class I.*—Pitcher, Wood, Cushing, Messenger, Barron, Archibald, Kollmyer; Robins and Taylor, equal; Ross (R. O. R.) *Class II.*—Boright, Mackenzie, Davey, Parker, Jaquays. *Class III.*—Blachford; Campbell (K. M.) and Pritchard, equal; Russell, Davidson, Ellicott, Angus, Raynes; Colquhoun and Mitchell and Tatley, equal; Allen; Hunt and Mewhort and Robinson, equal; Brown, Williams, Smyth; Graham and Leach and MacLennan, equal; Lyman, Ross (J. K.)

First Year.—*Class I.*—Mansur, Brown (J.), White; Fairclough and Hickson, equal; Gordon and Jordan, equal; Townsend, Stearns, Thompson. *Class II.*—Smith, Honeyman, Naylor; Gurd and Hunter and McGerrigle and McVicar, equal; Brown (C. L.) and James and Seymour, equal; Lee and LeRossignol and Mahaffy, equal. *Class III.*—Killaly, Ireland, Fraser, Reay, Millar; Ballantyne (J.) and Jackson and Munn, equal; Mills; Allen and McVicar (R.), equal; Brittain, Hutchison; Boyd and Donahue and Internoscia, equal; Byers, Skeels, Hodgins.

Honour Examinations in Mathematics and Natural Philosophy.

B.A.—*First Bank Honours.*—Tory H. M. (*Anne Molson Gold Medal*).

Second Year.—*First Rank Honours.*—Wood (*Prize*); Robins (*Prize*).

First.—*First Bank Honours.*—Brown (Jas.) (*Prize*); Fairclough.

Second Rank Honours.—Jordan (*Prize.*)

FRENCH.

B.A. Ordinary.—*Class I.*—Abbott, Binmore, Mathewson, *Johnson (N.) *Class II.*—Hall, Davidson, Cameron. *Class III.*—Ross.

Third Year.—*Class I.*—Moffatt (*Prize*), Pattison, McGregor (J. M.), Oliver, Whyte, Young, Smith, Ellenwood. *Class II.*—Tees, McGregor (E. B.) *Class III.*—Cole, McLeay.

Second Year.—*Class I.*—Archibald (*Prize*), Boright (*Prize*), Barron; McDonald and Wood, equal; *Blachford (A. C.) and Kollmyer and Robins, equal; Angus, Raynes; Campbell (R.) and *Johnson (H.) *Class II.*—Mitchell;

Leach and Lyman, equal; Cushing and Pitcher, equal; Davidson and Taylor, equal. *Class III.*—Allen and Messenger and Parker, equal; Blachford (H) and Smyth, equal; Carmichael; Hunt, Day; Mewhort and Ross, equal; Brown and Tatley, equal; *Mussen, Graham.

First Year.—*Class I.*—Jackson (*Prize*), Hickson (*Prize*), Mansur. *Class II.*—Fairclough, Reay, Millar, Donahue, Kirk, McGerrigle, Honeyman, Le Rossignol. *Class III.*—Killaly and Lee and MacVicar, equal; Seymour, James; Botterell and Gurd and Jordan, equal; Allen and Mills, equal; Internoscia, Hodgins, Brown (C.), Skeels; Munn and Stearns, equal; Thompson; Ballantyne and Brown (J.), equal; Brittain.

GERMAN.

Fourth Year.—*Class I.*—None. *Class II.*—Botterell (J.). *Class III.*—Botterell (H.I.R.), McFarlane.

Third Year.—*Class I.*—Ellenwood. *Class II.*—Hall, McMillan, McGregor.

Second Year.—*Class I.*—Mewhort, Archibald (*Prize*), Boright (*Prize*), Tatley, Angus. *Class II.*—Pitcher, McDonald; Campbell (K. M.) and Campbell (R.), equal; Davidson. *Class III.*—Lyman and Raynes, equal; Leach, Ross (J. K.), Williams, Jekill.

First Year.—*Class I.*—Jackson (*Prize*), Botterell, Seymour, LeRossignol; Fairclough and Millar, equal; McDonald, Seymour, White. *Class II.*—Mills. *Class III.*—Byers, Coffin.

HEBREW.

Advanced Course.—*Class I.*—Swanson, McAlpine. (*Prize*), Russell (A.), Finch. *Class II.*—Richardson, McGregor (A. W.), Dobson. *Class III.*—McLeod, Craig (G.), Moore (C.).

Intermediate Course.—*Class I.*—Daley, Ross (R. O), (*Prize*), Reid (W. D.). *Class II.*—Tener, Caldwell, Davey. *Class III.*—Kennedy (J.), Colquhoun, Flagg, Anderson (J. D.), Russell (Wm.), Davis, Eadie, McLennan (K.), Sanderson, Morris.

Elementary Course.—*Class I.*—McArthur, Gordon, (*Prize*), Townsend, Cleland, Gunn, Burnett, Mahaffy. *Class II.*—Gourlay, Massicotte, Barnby, McKinley, Mackenzie, Adams (J. R.), Ireland *Class III.*—Hunter, Hipp, Smith (E. P. M.), Maynard (M.), McVicar (A.), Ballantyne, Hutchison.

GEOLOGY.

B.A. Ordinary.—*Class I.*—Robertson, Derick, Fry, Trenholme, Abbott, Botterell (H. J.), Binmore. *Class II.*—Cameron; Mack and Mathewson, equal; Hall and MacDougall, equal; McGregor, Richardson, Kinghorn, Botterell (J.), McFarlane. *Class III.*—Paton, *Hausen, Henderson, Finch, Swanson.

Additional Department (Practical Geology and Palæontology).—Class I.—Fry. *Class II.*—* Hausen (Partial), Richardson, McGregor.

HONOUR EXAMINATION IN NATURAL SCIENCE.

B.A. *First Rank.*—Derick, Carrie M. (Logan Gold Medal); Robertson, Andrew A. (Medal Prize); Botterell (H. Inez R.); Trenholme, Edward C.

Third Year.—First Rank.—Warne James F.; Warne William A.

ZOOLOGY.

THIRD YEAR.—*Class I.*—LeRossignol (*Prize*), McDougall, Gunn, Pattison (*Lyman Prize*), Robins, Warne (J.), Smith, Finley (Partial), Warne (W.); Clendennen (Partial) and Hall (B.) and Holden and McAlpine, equal; Flagg, Oliver, McLeay, Goff, Hall (R. S.), McGregor (E.), Tees, Moffatt. *Class II.*—Cole, Moore (L.), Hipp, McGregor (J. M.), Ellenwood; McMillan and Pidgeon, equal; Young. *Class III.*—Whyte (J. T.), Craik, Russell.

Medical Students.—Class II.—Beaman. *Class III.*—Lamb.

BOTANY.

B.A. ORDINARY.—*Class I.*—Derick and Robertson, equal.

SECOND YEAR.—*Class I.*—Barron (*Prize*), Parker, Kollmyer, Tatley; Pitcher and *McArthur, equal; Cushing, Boright, Campbell (K. M.); Davey and Pritchard and Ross (R. O. R.), equal; Anderson; Mackenzie and Mitchell, equal; *McKinley; Archibald and *Logan, equal; Blachford and Smyth, equal; Raynes; Jekill and *Barnby, equal; Morris. *Class II.*—Graham; Hunt and Sadler and Jaquays, equal; Grisbrook; Messenger and McLennan, equal; Macdonald, Brown, *Eadie; Leach and Taylor and *Burnett, equal; Mewhort, Davidson; Angus and Williams, equal; Carmichael and Colquhoun equal. *Class III.*—Lyman and *Tener, equal; McLeod (N. A. D.), Campbell (R.), *Ross (J. K.), Day, Russell, Gourley, Sanderson, Allen, Robertson, Davis.

CHEMISTRY.

FIRST YEAR.—*Class I.*—*Patton, Cleland, White (*Prize*), Gordon, Reay (*Prize*). *Class II.*—Gurd and Munn, equal; James and Millar, equal; Murray; Elliott and Killaly, equal; Mansur, Jackson (M. L.); Hickson and Townsend, equal; Hodgins and MacDonald, equal; McVicar (A.), Ballantyne (J.), Brown (J. T.); Naylor and Thompson, equal. *Class III.*—Mahaffy; Brittain and Fairclough, equal; Brown (J.); Botterell and Mills, equal; Morrison, Kennedy, Internoscia; Ballantyne (Robt.) and Jordan, equal; MacInnes; LeRossignol and Smith (Ed.), equal; Hutchison, Seymour, Adams (J. R.), Honeyman, McLaren, Skeels, Coffin, McLean, Allan, Byers, Brown (C. L.).

Passed (*unclassified*).—Lee, Stearns, Gerrie.

Passed in PRACTICAL CHEMISTRY.—*Class I.*—White. *Class II.*—None. *Class III.*—Stearns.

Passed in earlier Examinations.—Dougall, Chantler, Massicotte.

GYMNASTICS.

Wickstbed. *Silver Medal.* J. J. Ross.—Student of fourth year.

Wickstbed. *Bronze Medal.* H. M. Jaquays.—Student of second year.

Donalda Department.—Sir Donald Smith's Prizes.

Fourth Year.—Annie Williams.

Second Year.—Louise Smith.

MORRIN COLLEGE.

B.A. ORDINARY EXAMINATION.

Greek.—*Class I.*—Craig.

Latin.—*Class I.*—Brodie. *Class II.*—DesBrisay, Craig, Anderson.

Mechanics and Hydrostatics.—*Class I.*—None. *Class II.*—Craig, Brodie. *Class III.*—McCullough, DesBrisay, Anderson.

Astronomy and Optics.—*Class I.*—Brodie. *Class II.*—DesBrisay. *Class III.*—Anderson, McCullough.

Moral Philosophy.—*Class I.*—Brodie, DesBrisay. *Class II.*—Anderson and Craig, equal.

History.—*Class I.*—Brodie. *Class II.*—DesBrisay, Anderson. *Class III.*—McCullough.

French.—*Class I.*—None. *Class II.*—Brodie, DesBrisay. *Class III.*—Anderson.

Hebrew.—*Class I.*—Craig. *Class II.*—McCullough.

INTERMEDIATE EXAMINATION.

Greek.—*Class I.*—None. *Class II.*—Drum, Sloane. *Class III.*—McHarg, Tanner, Logie.

Latin.—*Class I.*—None. *Class II.*—Drum, Sloane, Logie. *Class III.*—McHarg, Tanner.

Latin Prose Composition.—*Class I.*—None. *Class II.*—Drum, Logie, Sloane. *Class III.*—McHarg, Tanner.

Trigonometry and Algebra.—*Class III.*—Drum, Sloane, Tanner, McHarg.

Geometry and Arithmetic.—*Class I.*—Drum. *Class II.*—Logie. *Class III.*—Sloane, McHarg, Tanner.

Logic.—*Class I.*—Drum. *Class II.*—None. *Class III.*—McHarg and Tanner, equal; Sloane, Logie.

English Literature and History.—*Class I.*—Drum. *Class II.*—McHarg, Logie. *Class III.*—Sloane, Tanner.

French.—*Class I.*—Drum. *Class II.*—McHarg. *Class III.*—Sloane.

Hebrew.—*Class I.*—None. *Class II.*—Logie. *Class III.*—Tanner.

ST. FRANCIS COLLEGE.

INTERMEDIATE EXAMINATION.

GREEK.—*Class I.*—Fraser.
LATIN.—*Class II.*—Fraser.
LATIN PROSE COMPOSITION.—*Class I.*—Fraser.
TRIGONOMETRY AND ALGEBRA.—*Class II.*—Fraser.
GEOMETRY AND ARITHMETIC.—*Class I.*—Fraser.
LOGIC.—*Class I.*—Fraser.
ENGLISH LITERATURE AND HISTORY.—*Class I.*—Fraser.
FRENCH.—*Class I.*—Fraser.

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS.

RICHARD SMITH LEA.—The Stanley Silver Medal; special British Association Prize of $30.00; $25 Prize for Summer Report; certificates of merit in Theory of Structures, Hydraulics, Steam and Designing.

EDWARD ERNEST STUART MATTICE.—British Association Exhibition of $50; certificates of merit in Steam, Hydraulics and Designing.

PERCY NORTON EVANS.—British Association Gold Medal; Prize for Summer Report; certificate of merit in Metallurgy.

ROBERT HENRY JAMIESON.—Certificate of merit in Mineralogy.

GEORGE W. MOONEY.—Gower Prize ($25) for Mechanical model; certificates of merit in Mechanical Work, Machinery and Millwork, and Designing.

PETER WHITEFORD REDPATH.—Certificates of merit in Mechanical Work, Machinery and Millwork, and Designing.

SIDNEY CALVERT.—First rank honours in Natural Science.

ARTHUR EDWARD SHUTTLEWORTH.—Certificate of merit in metallurgy.

PASSED FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

Civil Engineering (*Advanced Course*).

IN ORDER OF MERIT.

RICHARD SMITH LEA, EDWARD ERNEST STUART MATTICE.

Civil Engineering (*Ordinary Course*).

IN ORDER OF MERIT.

RICHARD SMITH LEA, EDWARD ERNEST STUART MATTICE, ORRIN RENFORD, ALBERT HOWARD HAWKINS, WILLIAM SIMEON DENISON, CHARLES HERBERT ELLACOTT, CHESTER BOWDITCH REED.

Mechanical Engineering. (*Advanced Course*).

GEORGE WALWORTH MOONEY.

Ordinary Course. (In order of merit.)

PETER WHITEFORD REDPATH, GEORGE WALWORTH MOONEY.

Practical Chemistry. (*Advanced Course.*)

PERCY NORTON EVANS.

Ordinary Course. (In order of merit.)

PERCY NORTON EVANS, ARTHUR EDWARD SHUTTLEWORTH, WILLIAM SMAILL, SIDNEY CALVERT, ROBERT HENRY JAMIESON.

THIRD YEAR.

ERNEST ALBERT STONE.—Scott Exhibition of $66; certificates of merit in Mathematical Physics, Descriptive Geometry, Theory of Structures, Surveying, and Mathematics. Second Prize for Instrumental work (Levelling).

WILLLIAM JARDINE BULMAN.—Certificate of merit in Descriptive Geometry and Mathematics. Second Prize for Instrumental work. (Levelling).

ROBERT BICKERDIKE.—First Prize for Instrumental work (Levelling).

WILLIAM HENRY H. WALKER.—Prize for summer report; certificate of merit in Experimental Physics.

HUGH YELVERTON RUSSEL.—Certificate of merit in Mining.

PRIZES FOR GENERAL STANDING.

Civil Engineering.

ERNEST ALBERT STONE,—First Prize.

WILLIAM JARDINE BULMAN,—Second Prize.

Mining Engineering.

WILLIAM HENRY H. WALKER,—First Prize.

Mechanical Engineering.

HENRY MARTYN RAMSAY,—First Prize.

PASSED THE SESSIONAL EXAMINATIONS.

SECOND YEAR.

JOHN MURRAY MCGREGOR.—Certificates of merit in Mathematics, French, English, Mechanism, Surveying.

PETER HENRY LEROSSIGNOL.—Scott Exhibition of $66; Burland Chemistry Prize; certificates of merit in English, French, Mathematical Physics, Experimental Physics, Descriptive Geometry, Practical Chemistry, Botany and Theoretical Chemistry.

WILLIAM HENRY WARREN.—Certificates of merit in Descriptive Geometry, Practical Construction and Mechanical Work.

FOREST RUTHERFORD.—Certificates of merit in Mechanical Work and Practical Construction.

PRIZES FOR GENERAL STANDING.

MINING ENGINEERING.—John Murray McGregor, First Prize.

PRACTICAL CHEMISTRY.—Peter Henry LeRossignol, First Prize.

PASSED THE SESSIONAL EXAMINATION.

CIVIL ENGINEERING COURSE (in order of merit).—Thomas M. McLeod, Ellsworth Bolton, Louis B. Copeland, James G. R. Wainwright.

MINING ENGINEERING COURSE (in order of merit).—John Murray McGregor, Charles B. Kingston.

MECHANICAL ENGINEERING COURSE (in order of merit).—William H. Warren, Forest Rutherford, William N. Cunningham, W. C. Gregory Smart.

PRACTICAL CHEMISTRY (in order of merit).—Peter Henry LeRossignol, William C. Adams, Alonzo Klock, Walter D. McFarlane.

FIRST YEAR.

HOWARD TURNER BARNES.—Certificates of merit in Mathematics, Chemistry and Drawing.

ALEXANDER SCOTT DAWSON.—Certificates of merit in English, Mathematics, Sanitation and Chemistry.

LOUIS HERDT.—Certificate of merit in Mathematics.

LOUIS GREENBERG.—Certificate of merit in Mathematics.

ROBERT CLAUDE HOLMAN.—Certificate of merit in Mathematics.

FRANK LAMBERT.—Certificate of merit in Sanitation.

PRIZES FOR GENERAL STANDING.

HOWARD TURNER BARNES.—First Prize.

ALEXANDER SCOTT DAWSON.—Second Prize.

PASSED THE SESSIONAL EXAMINATIONS.

In order of merit.

Howard Turner Barnes, Alexander Scott Dawson, Louis Herdt; Louis Greenberg and Robert Claude Holman, equal; Henri Herdt, William Arthur Bowden, Frank Lambert, John Dougall Cochrane, Arthur W. K. Massey, Robert A. Gunn, David A. Murphy.

SUMMER REPORT.

FOURTH YEAR.—*Class I.*—Lea (*Prize, Stand pipes*); Evans (*Citric Acid*) and Mattice (*Cornwall Canal Enlargement*), equal; Ellacott (*Brockville Sewerage System*) and Shuttleworth (*Quantitative Analysis of Titaniferous iron ore*), equal; Jamieson (*Extraction of Glycerine from Spent-Lye*). *Class II.*—Redford (*Stanstead Granite*) and Smaill (*Portneuf Geology*), equal; Denison (*Steam*); Hawkins (*Bay of Quinté Bridge*) and Mooney (*Governors*) and Redpath (*Transmission of Power*), equal; *Class III.*—Reed (*Cement and Concrete*), Calvert (*Oats*).

THIRD YEAR.—*Class I.*—Walker (*Prize, Springhill Coal Mines*), Middleton (*A Spoon Dredge*). *Class II.*—Russell (*Londonderry Iron Mines*) and Wingham (*Loco. Frames*), equal; Bickerdike (*Vaudreuil and Prescott Ry.*); Stone (*Baie des Chaleurs Ry.*) and Klock (2nd year), (*Phosphorus*), equal; Ramsay (*Files and Filing*); Stuart (*Mt. Royal Incline Ry.*) and Williams (*Boilers*), equal. *Class III.*—Schwitzer (*Lake Temiscamingue Col. Ry.*), Bulman.

FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—Barnes, Herdt (L.), Murphy, Greenberg, Cochrane. *Class II.*—Herdt (H.), Darling, Costigan, Massey, Gunn, Bowden. *Class III.*—Holman, Churchill, Dawson, Lambert, Lorway.

MAPPING.

FIRST YEAR.—*Class I.*—Barnes; Murphy and Greenberg, equal; Cochrane. *Class II.*—Herdt (L.), Massey, Herdt (H.), Churchill, Darling, Bowden, Dawson, Lambert; Costigan and Holman, equal. *Class III.*—Gunn, Lorway.

DESCRIPTIVE GEOMETRY.

THIRD YEAR.—(*Civil and Mechanical*)—*Class I.*—Bulman, Stone. *Class II.*—Bickerdike, Schwitzer, Wingham, Ramsay, Middleton. *Class III.*—Williams, Stuart.

THIRD YEAR.—(*Mining*)—*Class II.*—Walker. *Class III.*—Russel.

SECOND YEAR.—*Class I.*—Warren, LeRossignol, McGregor. *Class II.*—Copeland, Cunningham; Rutherford and McLeod, equal; Bolton and Stevenson, equal; Kingston, Adams. *Class III.*—McFarlane, Wainwright, Purves, Smart, Klock, Ryan.

MECHANISM.

SECOND YEAR.—*Class I.*—McGregor. *Class II.*—Rutherford, McLeod, Kingston; Cunningham and Murphy, equal. *Class III.*—Purves, Copeland, Smart, Tighe, Bolton, Wainwright, Ryan; Warren and Featherston, equal.

PRACTICAL CONSTRUCTION.

FOURTH YEAR.—*Class II.*—Redpath, Mooney.

THIRD YEAR.—*Class I.*—Middleton, Ramsay. *Class II.*—Williams, Wingham.

SECOND YEAR.—*Class I.*—Warren, Rutherford. *Class II.*—Cunningham. *Class III.*—Smart and Pink and Simpson, equal.

MECHANICAL WORK.

FOURTH YEAR.—*Class I.*—Mooney and Redpath, equal.

THIRD YEAR.—*Class I.*—Middleton and Ramsay, equal. *Class II.*—Wingham. *Class III.*—Williams.

SECOND YEAR.—*Class I.*—Rutherford, Warren, Smart. *Class II.*—Cunningham, Pink. *Class III.*—Simpson.

GEOMETRY OF MACHINERY.

THIRD YEAR.—*Class II.*—Middleton, Ramsay, Wingham, Williams.

SURVEYING.

THIRD YEAR.—*Class I.*—Stone, Bulman. *Class II.*—Bickerdike, Schwitzer.

SECOND YEAR.—*Class I.*—McGregor. *Class II.*—Copeland, Kingston, Warren, Rutherford, McLeod, Purves, Bolton; Cunningham and Rankine, equal; Stevenson, Ryan. *Class III.*—Wainwright, Smart; Murphy and Simpson, equal; Featherston.

DESIGNING.

FOURTH YEAR.—*Class I.*—Lea, Redpath, Mooney, Mattice. *Class II.*—Rexford, Hawkins, Ellacott, Denison. *Class III.*—Reed.

THEORY OF STRUCTURES (*Advanced*).

FOURTH YEAR.—(*Civil Engineering.*)—*Class I.*—Lea, Mattice. (*Mechanical Engineering*).—*Class I.*—(None). *Class II.*—Mooney.

THIRD YEAR.—*Class I.*—Stone. *Class II.*—Bickerdike.

THEORY OF STRUCTURES (*Ordinary*).

FOURTH YEAR.—(*Civil Engineering.*)—*Class I.*—Lea, Mattice. *Class II.*—Rexford. *Class III.*—Hawkins, Denison, Reed, Ellacott. (*Mechanical Engineering*).—*Class I.*—None. *Class II.*—Redpath. *Class III.*—Mooney.

THIRD YEAR.—*Class I.*—Stone. *Class II.*—Walker, Bickerdike; Bulman and Schwitzer, equal; Wingham, Ramsay. *Class III.*—Williams; Stuart* and Russell, equal; Middleton.*

* To pass a supplemental in Analytical Mechanics.

HEAT (*Advanced*).

FOURTH YEAR.—(*In order of merit*).—Lea, Mattice, Mooney.

HEAT (*Ordinary*).

FOURTH YEAR.—*Class I.*—Lea, Mattice, Mooney, Redpath. *Class II.*—Denison, Hawkins, Rexford. *Class III.*—Ellacott and Reed, equal.

HYDRAULICS (*Advanced*).

FOURTH YEAR.—(*In order of merit*).—Lea, Mattice.

HYDRAULICS (*Ordinary*).

FOURTH YEAR.—*Class I.*—Lea, Mattice. *Class II.*—Redpath, Mooney. *Class III.*—Denison, Hawkins, Rexford; Ellacott and Reed, equal.

MACHINERY AND MILLWORK.

FOURTH YEAR.—*Class I.*—Mooney, Redpath.

THIRD YEAR.—*Class I.*—(None). *Class II.*—Middleton, Ramsay, Wingham. *Class III.*—Williams.

MATERIALS.

SECOND, THIRD AND FOURTH YEARS.—(*Civil and Mechanical Engineering*).—*Class I.*—Mattice, Stone. *Class II.*—Bickerdike, Rexford, Ellacott, Warren, Rutherford; Hawkins and Smart and Mooney, equal; Cunningham, Wingham, Reed, Bulman. *Class III.*—Redpath, Denison, Bolton, McLeod, Middleton, Schwitzer, Tighe, Wainwright, Copeland, Ramsay.

MATERIALS (*Metallurgy*).

SECOND, THIRD AND FOURTH YEARS.—(*Chemistry and Mining Courses*).—*Class I.*—Evans, Walker, Jamieson, Shuttleworth. *Class II.*—McGregor and Smaill, equal; Russel, Calvert. *Class III.*—Purves.

CHEMISTRY (*Practical*).

FIRST YEAR.—*Class I.*—Barnes, Holman, Dawson, Gunn*; Cochrane and Herdt (H.), equal; Bowden and Darling*, equal; Costigan and Greenberg and Herdt (L.), equal; Massey*, Lorway*, Murphy* (D.).

* Supplemental in Theoretical Chemistry.

SECOND YEAR.—(*Chemistry Course.*)—*Class I.*—LeRossignol; Klock and MacFarlane, equal. *Class II.*—Adams, Jackson (Oc.).

SECOND YEAR.—(*Mining Course.*)—*Class I.*—McGregor. *Class II.*—None. *Class III.*—Kingston.

THIRD YEAR.—(*Mining Course.*)—*Class I.*—Walker. *Class II.*—Russel.

ESSAY.

FOURTH YEAR.—*Class I.*—Calvert and Evans, equal; Lea and Shuttleworth, equal; Mattice and Jamieson and Smaill, equal. *Class II.*—Rexford and Redpath, equal; Hawkins and Mooney, equal. *Class III.*—Denison and Ellacott and Reed, equal.

THIRD YEAR.—*Class I.*—Stone, Walker. *Class II.*—Bickerdike and Wingham, equal; Russel; Bulman and Middleton and Stuart, equal; Williams and Ramsay, equal. *Class III.*—Schwitzer.

SECOND YEAR.—*Class I.*—LeRossignol. *Class II.*—Adams; Stuart and Bolton and Copeland, equal; Rankine; Cunningham and Pink and Klock and Rutherford and McGregor and McLeod and Featherston, equal. *Class III.*—Purves and McFarlane, equal; Tighe; Warren and Murphy and Ryan, equal; Stevenson.

CHEMISTRY (*General*).

FIRST YEAR.—*Class I.*—Dawson, Barnes, Bowden. *Class II.*—Greenberg, Herdt (L.), Herdt (H.), Cochrane, Lambert, Holman. *Class III.*—Costigan, McLeod (2nd Year).

SECOND YEAR.—(*Chemistry Course*)—*Class I.*—LeRossignol, Adams, Klock. *Class II.*—None. *Class III.*—Jackson (Oc.), MacFarlane.

SECOND YEAR.—(*Mining Course*)—*Class I.*—None. *Class II.*—McGregor. *Class III.*—Kingston, Purves.

THIRD YEAR.—(*Mining Course*)—*Class I.*—Walker. *Class II.*—None. *Class III.*—Russel.

FOURTH YEAR.—(*Chemistry Course, Ordinary*)—*Class I.*—Evans. *Class II.*—Smaill, Shuttleworth, Calvert, Jamieson.

FOURTH YEAR.—(*Chemistry Course, Advanced*)—*Class I.*—Evans.

MINING.

THIRD YEAR.—*Class I.*—Walker, Russel.

MINERALOGY (*Advanced*).

THIRD YEAR.—(*Mining Course*)—*Class I.*—Walker. *Class II.*—Russel.

Passed in Theoretical Mineralogy only.—*Class I.*—Ferguson.

FOURTH YEAR.—(*Chemistry Course*)—*Class I.*—Calvert and Jamieson, equal. *Class II.*—Evans, Smaill, Shuttleworth.

ASSAYING.

FOURTH YEAR.—(*Chemistry Course*)—*Class I.*—Evans. *Class II.*—Smaill, Jamieson, Calvert, Shuttleworth.

ZOOLOGY.

SECOND YEAR.—*Class I.*—McLeod, Bolton, Ryan. *Class II.*—Stevenson, McGregor, Murphy, Wainwright, Featherston. *Class III.*—Purves, Copeland, Rankin.

GEOLOGY.

THIRD AND FOURTH YEARS.—*Class I.*—Russel, Stone, Walker. *Class II.*—Bulman, Smaill, Jamieson, Bickerdike. *Class III.*—Stuart, Schwitzer.

BOTANY.

SECOND YEAR.—*Class I.*—Le Rossignol. *Class II.*—Adams. *Class III.*—Klock, McFarlane.

MATHEMATICS.

THIRD YEAR.—(*Advanced*).—*Class I.*—Stone. *Class III.*—Bickerdike.

THIRD YEAR.—(*Ordinary*).—*Class I.*—Stone, Bulman. *Class II.*—Bickerdike, Schwitzer. *Class III.*—Stuart.

SECOND YEAR.—*Class I.*—McGregor, McLeod. *Class II.*—Bolton, Copeland. *Class III.*—Cunningham, Purves, Murphy, Featherston, Warren, Rutherford, Smart, Wainwright, Simpson, Kingston.

FIRST YEAR.—*Class I.*—Holman, Greenberg, Herdt (L.). Barnes, Dawson, Herdt (H). *Class II.*—Bowden, Cochrane. *Class III.*—Lambert, Massey, Gunn, Taylor,* Murphy.†

* To pass a supplemental in Geometry.
† " " " " Algebra.

MATHEMATICAL PHYSICS.

THIRD YEAR.—*Class I.*—Stone, Bickerdike, Russel. *Class II.*—Ramsay. *Class. III.*—Wingham, Middleton, Walker, Schwitzer; Bulman and Stuart and Williams, equal.

SECOND YEAR.—*Class I.*—LeRossignol, Adams, McGregor. *Class II.*—McLeod, Bolton, Warren. *Class III.*—Cunningham, Copeland, Rankin, Kingston; Simpson and Stevenson, equal; Rutherford, Murphy, Featherston, Purves, McFarlane, Smart, Ryan; Klock and Tighe and Wainwright, equal.

EXPERIMENTAL PHYSICS.

THIRD YEAR.—*Class I.*—Walker, Stone, Bulman, Russel, Wingham. *Class II.*—Stuart, Bickerdike, Schwitzer. *Class III.*—Middleton, Ramsay.

SECOND YEAR.—*Class I.*—Le Rossignol. *Class II.*—Warren; Klock and Rutherford, equal; Adams. *Class III.*—Wainwright, Copeland, Rankine; Bolton and McFarlane and Simpson, equal; Tighe; McLeod and Purves and Stevenson, equal; Cunningham and Pink, equal; Murphy, Featherston, Smart.

ENGLISH.

THIRD YEAR.—*Class I.*—Bickerdike, Walker, Wingham. *Class II.*—(None). *Class III.*—Middleton; Bulman and Russel, equal; Stuart, Ramsay, Schwitzer, Williams.

SECOND YEAR.—*Class I.*—McGregor and LeRossignol, equal. *Class II.*—McFarlane, Tighe, Cunningham; Bolton and Klock and Simpson and Wainwright, equal. *Class III.*—Adams and Rutherford, equal; Pink and Purves and Warren, equal; Rankine, Featherston; Ryan and Stevenson, equal; Smart, Copeland, McLeod.

FIRST YEAR.—*Class I.*—Dawson, Lambert, Bowden, Barnes; Herdt (L.) and Taylor, equal. *Class II.*—Holman, Gunn, Greenberg, Darling, Herdt (H.). *Class III.*—Massey, Costigan, Murphy, Cochrane.

FRENCH.

FIRST YEAR.—*Class I.*—None. *Class II.*—Herdt (L), Greenberg, Dawson, Lambert. *Class III.*—Taylor, Herdt (H.), Bowden, Gunn, Massey, Darling, Lorway.

SECOND YEAR.—*Class I.*—LeRossignol (*certificate of merit*) and McGregor, equal. *Class II.*—Adams, McLeod. *Class III.*—Rankine, McLeod, Featherston, Copeland.

GERMAN.

FIRST YEAR.—*Class I.*—Barnes, Cochrane. *Class II.*—None. *Class III.*—Holman, Murphy (D.A.).

SECOND YEAR.—*Class I.*—Cunningham (*certificate of merit*). *Class II.*—None. *Class III.*—Rutherford, Murphy (P.J.); Tighe and Bolton, equal.

LETTERING.

SECOND YEAR.—*Class I.*—Warren, Wainwright, Copeland; Purves and Ryan, equal; McGregor. *Class II.*—Rutherford; Smart and Murphy and Bolton, equal; Stevenson, Rankine, Cunningham. *Class III.*—McLeod, Featherston, Pink, Simpson, Tighe.

FIRST YEAR.—*Class I.*—Barnes, Greenberg, Murphy. *Class II.*—Cochrane Herdt (Louis), Massey, Herdt (Henry), Churchill, Darling, Bowden, Dawson, Lambert. *Class III.*—Holman, Costigan, Gunn, Lorway.

METEOROLOGY.

FOURTH YEAR.—*Class II.*—Mooney, Denison, Hawkins.

FACULTY OF VETERINARY SCIENCE.

PRIZES.

Silver Medal, for the best general examination on all pass subjects during the three years of study, awarded to R. N. Walsh.

Veterinary Medicine and Surgery.— 1st prize, L. E. Willyoung ; 2nd prize, J. F. Scott.

Chemistry.—1st prize, S. S. Twombly ; hon. mention, J. A. McCrank.

Anatomy.—1st prize, J. F. Scott ; 2nd prize, L. E. Willyoung.

Physiology.—1st prize, Geo. E. Macaulay ; hon. mention, S. S. Twombly.

Histology.—Prize, S. S. Twombly ; hon. mention, J. W. Moffatt.

Botany.—Prize, J. W. Moffatt ; hon. mention, J. Plaskett.

Materia Medica.—Prize, J. S. Twombly ; hon. mention, G. E. Macaulay.

Pathology.—L. E. Willyoung.

Veterinary Obstetrics and Diseases of Cattle.—1st prize, R. N. Walsh ; 2nd prize, L. E. Willyoung.

Students of the University,

SESSION 1889 90.

McGILL COLLEGE.

FACULTY OF LAW.

FIRST YEAR.

Hutcheson, Robert B.,	Montreal, Q	Truell, Harry V.,	Barnston, Q
Ryan, Percy C,	Ottawa, O		

SECOND YEAR.

Hatchette, Francis J.,	Montreal, Q	Hibbard, Frederick Wm.,	Dublin
Geoffrion, Victor,	Montreal, Q		

THIRD YEAR.

Ambrose, J. D. L.,	Montreal, Q	Kneeland, Warren A.,	Montreal, Q
England, Geo. P.,	Sheffal, Q	Pelletier, Hormisdas Rémi,	Marieville, Q
Girouard, Désiré Howard,	Montreal, Q	Vipond, Thomas John,	Montreal, Q
Harvey, Alfred Eugen,	Stanstead, Q		

PARTIAL.

Bickerdike Frank,	Montreal, Q	Paton John,	Largs, Ayrshire, Scotland
Menard Etienne,		Williamson Thos.,	Sanquhar, Scotland
Owens, Thomas P.,	Drogheda, Ireland		

FACULTY OF MEDICINE.

Addy, G. A. B., St. John, N.B.
Akerly, A. W. K., Fredericton, N.B.
Alexander, W. W., Stanhope, P.E.I.
Anderson, Norman, Montreal, Q.
Ault, C. R., Tilsonburg, Ont.
Ault, C. A., Oshkosh, Wis.
Aylen, E. D., Aylmer, Q.

Barrett, H. H., Three Rivers, Q.
Benny, R., Riverfield, Q.
Berwick, R. H., Farnham, Q.
Berwick, G. A., Farnham, Q.
Beers, A. H., Montreal, Q.
Binmore, J. E., Montreal, Q.
Bissett, C. P., River Bourgeois, N.S.
Blunt, H. W., West Bolton, Q.
Bowes, E. J., Ottawa, O.
Bostwick, W. E., Montreal, Q.
Boyce, B. F., Norham, O.
Bowen, G. A., Compton, Q.
Bowie, R. A., Brockville, O.
Brouse, J. E., Brockville, O.
Bruce, W. A., Grand View, N.S.
Brown, F. G. A., Brockville, O.
Brown, J. A., Sarnia, O.
Brown, W. A., Chesterville, O.
Brunette, J. T., Cornwall, O.
Broderick, E. J., B.A., Fredericton, N.B.
Brousseau, J. A., Ottawa, O.
Busby, J., Pontview, Q.
Burritt, C. H., B.A., Mitchell, O.

Campbell, Robert, Laggan, O.
Carroll, B. W., Stratford, O.
Cameron, J. W., L'Orignal, O.
Carmichael, H. B. W., Montreal, Q.

Calkin, B. H., Kentville, N.S.
Carlaw, C. M., Campbellford, O.
Campbell, John, Longueuil, Q.
Chipman, R. J., Halifax, N.S.
Chabot, J. L., Ottawa, O.
Clark, John, Troy, O
Clarke J. W., Tatamagouche, N.S.
Clemesha, J. C., Port Hope, O.
Clune, P. J., Warkworth, O.
Cooper, M. A., Ormstown, Q.
Connolly, A. J., Lennoxville, Q.
Coburn, A. D., Keswick Bridge, N.S.
Corbin, F. G., Bedford, N.S.
Coleman, A. H., Belleville, O.
Curtis, I. B., Hartland, N.B.

Day, A. R., Guelph, O.
Day, S. W., St. Thomas, O.
Dewar, G. F., New Peril, P.E.I.
Dewar, A. F., Kertch, O
Dewar, A., Ormond, O.
Decks, W. E., B.A., N. Williamsburg, O.
DuVernet, E., Gagetown, N.B.
Duncan, G. H., Duncanville, O.

Ellis, W. L., St. John, N.B.
Ellis, T. H., Pembroke, O.
Esty, A. S., Keswick Ridge, N.B.
Evans, D. J., Montreal, Q.

Farwell, W. A., Lennoxville, Q.
Feron, Frank, Montreal, Q.
Fletcher, R. W., Londonderry, N.S.
Flemming, G. W., Chipman, N.B.
Fraser, M. S., Brandon, Man.
Fulton, Cyril, Greenmore, O.
Fulton, J. A., Franklin, Q.

Girdlestone, C. P., Winnipeg, Man.
Gibson, R. J., Clinton, O.
Glendenning, R. G., Trumanville, N.S.
Goff, H. N., Newport, P.E.I.
Gorrell, A. S., Brockville, O.
Graham, W. C. R., Prescott, O.
Grant, H. A., Pembroke, O.
Greene, T. J., Carleton Place, O.
Gratton, E. A., Montreal, Q.
Gunter, F. B., Fredericton, N.B.

Halliday, V., Peterboro', O.
Hattie, W. H., New Glasgow, N.S.
Hamilton, W. F. Peterboro, O.
Hamilton, W. F., Sackville, N.B.
Hamilton, H. D., Montreal, Q.
Harrison, J. W., Fredericton, N.B.
Harris, N. M., Stella, O.
Hayes, P. H., Montreal, Q.
Hayes, Jno., Richmond, Q.
Hayes, Joseph, Nelson, N.B.
Hall, J. M., Franklin, Q.

Haight, Mortimer, New Durham, O.
Hewitson, S. W., Georgetown, O.
Hewitson, John, Riverside, O.
Henderson, J. G., Warkworth, O.
Hogg, D. H., Winnipeg, Man.
Holden, D. B., Montreal, Q.
Hume, G. N. L., Leeds, O.

Inksetter, W. E., Copetown, O.
Internoscia, A., Montreal, Q.
Irving, E., Pembroke, O.
Irwin, H., Pembroke, O.
Irwin, A. F., Chatham, O.

Jack, DuVernet, Fredericton, N.B.
Jakes, W., Merrickville, O.
Jamieson, W. H., Montreal, Q.
Jameson, Thos., Buffalo, N.Y.
Jenkins, W. E., Conquerall Bank, N.S.
Jento, C. P., Brockville, O.
Johnson, Albert, Ottawa, O.
Jones, W. A., Clandeboye, O.

Kee, D. N., Fordyce, O.
Keir, E. J., Malpeque, P.E.I.
Kelley, C. I., West Flamborough, O.
Kemp, . . D., Montreal, Q.
King, H. S., Sarnia, O.
Kinghouse, H. M., ——, U.S.
Kyle, J. N., North Winchester, O.

Lambert, E. M., Ottawa, O.
Lambly, W. O., Montreal, Q.
Lang, F. W., St. Marys, O.
Langley, A. F., Victoria, B.C.
Lawrence, J. W., Lower Dumfries, N.B.
Leslie, A. C., Grand Forks, U.S.
Lewin, A. A., St. John, N.B.
Lewis, J. T., Hillsboro, N.B.
Liddell, G. L., Cornwall, O.
Lindsay, Wm., St. Mary's, O.
Livingstone, H. A., Montreal, Q.
Love, A., New Glasgow, N.S.
Lovering, W. F., Seattle, U.S.

Mackay, R. B., Toronto, O.
Mackay, H. H., Plainfield, N.S.
Mackenzie, A. U. X., Smithfield, O.
MacPhail, J. A., B.A., Montreal, Q.
Mair, A. W., Clinton, O.
Main, C. G., St. Andrews, N.B.
Mader, A. I., New Canada, N.S.
Martin, C. F., B.A., Montreal, Q.
Martin, M. McL., Brown's Creek, P.E.I.
Martin, S. H., Savage Mines, Q.
Matheson, R., Cardigan, O.
Martin, C. H., Lacolle, Q.
Massiah, W. B. H., Barbadoes, W.I.
McArthur, A. D., Kenmmore, O.
McCann, E. A. A., Montreal, Q.

McCrimmon, A. A., St. Thomas, O.
McDonald, M. S., Scotchtown, Q.
McEown, F., Lyndoch, O.
McKechnie, R. E., Winnipeg, Man.
McKay, W. T., Clifton, P.E.I.
McKenzie, A. R., Montreal, Q.
McKenzie, R. J., Melbourne, Q.
McKenzie, R. G., Montreal, Q.
McKenty, J. E., Montreal, Q.
McKee, G. L., Coaticock, Q.
McInnon, A. I., Kinross, O.
McGuire, J. C., Trenton, O.
McGauran, G. F., Richmond, Q.
McIntyre, J. B., Clifton, P.E.I.
McLellan, A. C., Indian River, P.E.I.
McLellan, D. A., Fournier, O.
McLellan, K., Dunvegan, O.
McLeod, H. S., Dunstaffnage, P.E.I.
McMillan, W., Alberry Plains, P.E.I.
McMillan, G. A., St. Agnes, Q.
McMillan, J. H., Pictou, N.S.
McManus, H. D., B.A., Fredericton, N.B.
McMurrin, R. F., Richmond, Q.
McNally, H. H., Fredericton, N.B.
Meade, C. J., Morrisburg, Ont.
Meikle, W. F., Morrisburg, O.
Mills, W. C., Montreal, Q.
Moore, J. M., Belleville, O.
Morrow, W. S., Halifax, N. S.
Morris, O., Pembroke, O.
Morris, F. X., Fareville, N.B.
Morphy, A. G., B.A., London, C.
Mulligan, E. A., Aylmer, Q.
Murray, M. W., Beachwood, O.
Mutch, P. R., St. John's, N.F.

Neil, John, Aylmer, Q.
Nichol, H. J. S., Montreal, Q.
Noble, C. T., Sutton West, O.

O'Connor, C., Worcester, Mass.
Ogden, C. L., Warrensburg, U.S.
Oliver, A. J., Lennoxville, Q.
Outwater, S. W., Plainfield, O.

Patterson, Wm., New Glasgow, N.S.
Paterson, L., Harbor Grace, Nfld.
Patton, H. M., B.A., Montreal, Q.
Parke, G. H., Quebec, Q.
Parker, G. W., Cardigan, O.
Peake, J. P., Fredericton, N.B.
Phelan, E. D., Montreal, Q.
Phillimore, R. H., Cookshire, Q.

Quirk, E. M., Montreal, Q.

Read, F. W., Ramsey, Hants, Eng.
Reid, J. T., Montreal, Q.
Richards, S., Ottawa, O.
Robinson, H. J., Brockville, O.
Robinson, B. E., Orillia, O.
Robertson, E. A., Lennoxville, Q.
Robertson, W., Chesterfield, O.
Robertson, T. F., Brockville, O.
Rodgers, W. A., East Settlement, Q.
Rodgers, W., Montreal, Q.
Rorke, R. F., St. Thomas, O.
Ross, A. R., Quebec, Q.
Ross, J., Halifax, N.S.

Seane, J. W., Chatham, O.
Scammell, J. H., St. John, N.B.
Seaton, J. S., St. John, N.B.
Scott, W. H., Owen Sound, O.
Seguin, J. W. A., Rigaud, Q.
Semple, E. J., Montreal, Q.
Shaw, G. F., Ottawa, O.
Shaw, Thos. P., Montreal, Q.
Sherriff, G. R., Franklin, Q.
Sinclair, O. W., Bridgetown, N.B.
Smith, T. H., North Sidney, C.B.
Smith, W. H., Winnipeg, Man.
Smith, W. D., Plantagenet, O.
Smith, C. F., West Winchester, O.
Smith, A. G., St Marys, O.
Sparling, A. J., Pembroke, O.
Spier, J. R., Lindsay, O.
Stuart, J. A., Clarenceville, Q.

Taplin, M. M., Addison, O.
Taylor, J. N., Ottawa, O.
Taylor, T. T., Chatham, O.
Telfer, W. J., Burgovne, O.
Thompson, J., Moulinette, O.
Thompson, F. E., Winnipeg, Man.
Tomkins, J. E. C., Coaticook, Q.
Trenholm, G. A., Coaticook, Q.
Trenholm, A. M., Trenholmville, Q.
Travers, J. B., St. John, N.B.
Tremblay, L., Ottawa, O.
Troy, W., Valleyfield, Q.
Tunstall, C. A., Montreal, Q.

Wade, A. S., Perth, O.
Walsh, T. N., Ormstown, Q.
Walsh, W. E., Ormstown, Q.
Walker, W. G., Stratford, O.
Walker, J. L., Montreal, Q.
Wasson, H. J., Peterboro', O.
Watson, N. M., Williamstown, O.
Webster, R. E., Brockville, O.
Whyte, J. T., Montreal, Q.
White, D. D., Montreal, Q.
Wilson, Robert, Montreal, Q.
Wilson, R. D., Derby, N.B.
Wilson, W. A., Derby, N.B.
Williamson, W. P., Chatham, O.
Williamson, H. M., Guelph, O.
Woodruff, E. H., St. Catharines, O.
Yates, H. B., Brantford, Ont.
Yearwood, C. A., Barbadoes, W.I.
Yorston, F. S., Truro, N.S.

FACULTY OF ARTS.

Undergraduates.

FIRST YEAR.

Name.	*School.*	*Residence.*
Adams, James R.,	Private Tuition,	Toronto, O
Allen, G. Fred.,	Waterloo Academy,	Waterloo, Q
Boyd, Leslie H.,	H. S., Montreal,	Montreal, Q
Brown, Cecil L.,	Huntingdon Academy,	Port Lewis, Q
Brown, James,	Huntingdon Academy,	Huntingdon, Q
Brunet, Léandre,	Sabrevois College,	Montreal, Q
Byers, W. Gordon M.,	H. S., Gananoque,	Gananoque, Q
Coffin, James H.,	Private Tuition,	Montreal, Q
Dawson, Percy M.,	Private Tuition,	Montreal, Q
Demers, Placide,	Sabrevois College,	Roxton Falls, Q
Donahue, Wm.,	H. S., Montreal,	Montreal, Q
Gerrie, Wm. A.,	H. S., Fergus,	Fergus, O
Gordon, John S.,	Prince of Wales College, P.E.I.,	Alberton, P.E.I
Gurd, Charles C.,	H.S., Montreal,	Montreal, Q
Hickson, J. W. A.,	Eliock School, Montreal,	Montreal, Q
Hodgins, Lionel,	Shawville Academy,	Shawville, Q
Honeyman, H. A.,	Stanstead Wesleyan College,	Knowlton, Q
Hunter, John N.,	Clifton College, England,	Clifton, Eng.
Hutchison, David,	Private Tuition,	Brechin, O
Internoscia, Jérome,	Technical Institute, Italy,	Montreal, Q
Ireland, George D.,	Prince of Wales College, P.E.I.,	Alberton, P.E.I
Jordan, John E.,	Coaticook Academy,	Coaticook, Q
Killaly, H. N.,	Trinity College School, Port Hope,	Morrisburg, O
Lewis, W. P.,	Sabrevois School,	Iberville, Q
McGerrigle, J. A.,	Huntingdon Academy,	Ormstown, Q
MacKeracher, W. M.,	H. S., Montreal,	Howick, Q
MacVicar, Robert M.,	Eliock School, Montreal,	Montreal, Q
McVicar, Arch.,	Strathroy Collegiate Inst.,	Strathroy, O
Mahaffy, Albert,	H. S., Goderich,	Port Albert, O
Mansur, Charles,	Stanstead Wesleyan College,	Stanstead, Q
Mitchell, Albert T. G.,	Sabrevois College,	Montreal, Q
Munn, Stewart M.,	H. S., Montreal,	Montreal, Q
Naylor, Henry A.,	Shawville Academy,	Shawville, Q
Page, A.,	Tavistock Gram. School, England,	Oaklampton, Eng
Skeels, Albie A.,	H. S., Montreal,	Montreal, Q
Smith, E. F. McL.,	H. S., Hawkesbury,	Hawkesbury, Q
Stearns, Chas. F. N.,	Private Tuition,	Montreal, Q
Thompson, James,	Lachute,	Bristol, Q
Townsend, Wm. McN.,	Prince of Wales Coll., P.E.I.,	Traveller's Rest, P.E.I
White, Alfred H.,	H. S., Peoria,	Peoria, Ill., U.S

SECOND YEAR.

Allen, James H.,	St. Catharines, O.,	West Osgoode, O
Anderson, John D.,	Private Tuition,	Tiverton, O
Archibald, Edward,	H. S., Montreal,	Montreal, Q
Aylen, Ernest D.,	Lachute Academy,	Aylmer, Q
Barron, Robt. H.,	Lachute Academy,	Lachute, Q
Blachford, Henry,	Huntingdon Academy,	Huntingdon, Q
Brown, Daniel,	Huntingdon Academy,	Morris Flats, Q
Carmichael, S.,	Bishop's College School,	Montreal, Q
Cushing, Harold B.,	H. S., Montreal,	Montreal, Q
Davey, R. George,	Whitby Collegiate Institute,	Whitby, O
Davis, Ernest A.,	Huntingdon Academy,	Morris Flats, Q

Day, Maurice B.,	H. S, Montreal,	Montreal, Q
Drum, Lorne,	Bishop's College School,	Quebec, Q
Ellicott, T. W. H,	H. S., Montreal,	Montreal, Q
Flinn, John W.,	Pictou Academy, N.S.,	Wallace, N.S
Fraser, Alex. D.,	Huntingdon Academy,	Dundee, Q
Gisbrook, Ed. O.,	Private Tuition,	Sarnia, O
Jaquays, H. M.,	Sutton Academy,	Sutton, Q
Jekill, Henry,	Dioc Theological College,	Morris Flats, Q
Kollmyer, W. Hector,	H. S., Montreal,	Montreal, Q
Mackenzie, Ewen A.,	H. S., Goderich,	Lucknow, O
McLennan, Kenneth,	H. S., Alexandria,	Alexandria, O
Messenger, Wm. John,	Private Tuition,	Navarro, Cal., U.S
Mitchell, Robt. J. W.,	H. S., Montreal,	Montreal, Q
Morris, John T.,	Whitby Collegiate Inst.,	Whitby, O
Pritchard, Wm. S.,	H. S., Harriston,	Redgrave, O
Read, George E.,	Cherville College,	Romsey, Eng
Robertson, A.,	H. S, Weston,	Woodbridge, O
Robins, Geo. D.,	H. S., Montreal,	Montreal, Q
Ross, Robert O.,	Baddock Acad, C.B.,	Margaree, C.B
Russell, Wm.,	H. S., Montreal,	Matane, Q
Sadler, Thomas A.,	Huntingdon Acad.,	Dewittville, Q
Smyth, Walter H,	H. S., Montreal,	Montreal, Q
Taylor, James,	Ottawa Collegiate Inst.,	Ottawa, O
Williams, Edward J.,	H. S., Pembroke,	Montreal, Q
Wood, Arthur B.,	H. S., St. Johns, Q.,	St. Johns, Q

THIRD YEAR.

Cole, Arthur A.,	Montreal, Q	McLeay, Alfred A.,	Danville, Q
Craik, Galen,	Rockburn, Q	McLeod, Norman A. D.,	Lochside, N.S
Dobson, John R.,	Pictou, N.S	Moore, Levi,	Lachute, Q
Ellenwood, Wm. R.,	Yarmouth, N.S	Moore, Samuel,	Mille Isles, Q
Goff Harry N.,	Georgetown, P.E.I	Oliver, William,	Rockburn, Q
Gunn, Wm. Thos.,	Montreal, Q	Pidgeon, G. C.,	New Richmond, Q
Guthrie, Donald,	Guelph, O	Reeves, Arch. C.,	Ormstown, Q
Hall, Richard S.,	Montreal, Q	Russell, Andrew,	Bristol. Q
Hipp, E. G.,	Montreal, Q	Tees, John,	Montreal, Q
Holden, Arthur R.,	Montreal, Q	Warne, James F.,	Eastman, Q
LeRossignol, W. J.,	Montreal, Q	Warne, Wm. A,	Eastman, Q
McAlpine, John J.,	Welland, O	Whyte, George,	Leeds Village, Q
McDougall, G. W.,	Montreal, Q	Whyte. Jas T.,	Manotick. O
McGregor, John M.,	Montreal, Q	Young, Henry C.,	North Troy, Vt., U.S

FOURTH YEAR.

Cameron, John A.,	Huntingdon, Q	Mack, Silas W.,	Ayer's Flat, Q
Colclough, Wm. F.,	St. Catharines, O	Mathewson, George H.,	Montreal. Q
Daley, James,	Stouffville, O	Moss, W. T. D.,	Portage la Prairie, Man.
Davidson, Peers,	Montreal, Q	Nicholls, Albert G.,	Montreal, Q
Elliott, Edward A.,	Ulverton, Q	Parker, John,	Leeds Village, Q
Elliott, James A.,	Shawville, Q	Paton, W. E.,	Sherbrooke, Q
Finch, C. W.,	Caledonia, O	Reid. William D.,	Maple Hill, Q
Fraser, D. J.,	Alberton, P.E.I	Richardson, P. L.,	Lyn, O
Fry, Fred. M.,	Montreal, O	Robertson, Andrew A.,	Montreal, Q
Hall, Alex. R.,	Montreal, Q	Ross, Joseph J.,	Dewittville, Q
Hunter, Alexander,	Bute, Q	Sutherland, Hugh C.,	Embro, O
Kinghorn, H. M.,	Montreal, Q	Swanson, Isaac J.,	Stouffville, Q
McDougall, Robert,	Ormstown, Q	Tolmie, Alexander,	Montreal, Q
McDuffee, Lewis P.,	Stansted, Q	Tory, Henry Marshall,	Guysboro', N.S
McGregor, A. M.,	Montreal, Q	Trenholme, Edward C.,	Montreal, Q
McVicar, Donald	Strathroy, O	Walsh, Alex. W.,	Huntingdon, Q

Partial and Occasional.

Partial Students are indicated by the asterisk.

*Adams, Robt., Sarnia, O
*Ballantyne, Robt. L., Dunbar, O
*Barnby, Robt. H., Lucknow, O
Bickerdike, Frank A. C., Montreal, Q
*Blunt, Forest H., Knowlton, Q
Blunt, Simon B., Knowlton, Q
Bowden, Wm. A.,
Burke, Thos. E., Farran's Point, O
*Burnett, Herbert W., Toronto, O
*Cameron, Malcolm J., Cowansville, Q
*Chantler, Wm. N., West Assa
Charles, Guillaume, Montreal, Q
*Church, Athole, Montreal, Q
*Cleland, John A., Montreal, Q
*Clendinnen, George S., Ottawa, O
Darling, Edward,
Dawson, Alexander Scott,
Dempster, Wm. J.,
*Dixon, James C., Montreal, Q
*Eadie, Robt. E., Sherbrooke, Q
*Flagg, Edwin L., Morrisburg, O
*Elliott, Alex., Shawville, Q
*Fraser, Frank C., Montreal, Q
*Gault, M H., Montreal, Q
Giroulex, L. R., Duclos, Q
Kennedy, John, Conn. Co., Wellington, O
Ker, John, Montreal, Q
Logan, Alfred, Musquodoboit, N.S

*Macaulay, Alexander, Montreal, Q
*Macdiarmid, Arch. A., Dornoch, O
*McArthur, John H., Kilbride, Q
McCuaig, William,
*McInnes, John P, Vankleek Hill, O
*McKinley, George, Seaforth, O
McLaren, Duncan T., Montreal, Q
McLaren, Narcisse, Chicoutimi, Q
*McLean, Neil, Vankleek Hill, O
*Massicotte, Léopold, Montreal, Q
Maynard, Joseph, Ste. Brigide, Q
Moore, Church M., Economy, Col. Co., N.S
*Morison, W. T., Ormstown, Q
*Murray, Jas. H., Glen Willow, O
*Orr, Wm., Ottawa, O
Patton, Walter M., Montreal, Q
*Rollitt, Charles D., Montreal, Q
Rondeau, S. P., Joliette, Q
Sauvé, Narcisse A, Hull, Q
Savignac, Joseph A., Tul'eride, Col., U.S
Strong, John J., Cambria, Q
*Vipond, Chas. W., Montreal, Q
Waterson, Wm. J. Mc., Vankleek Hill, O
Wilkinson, Thos. J.,
Wilson, J. H., Montreal, Q

Caldwell, Henry, Carney, O
*Dougall, Fred. E., Montreal, Q
Ferguson, A. H., Montreal, Q
Gourlay, John J. L, Carp, O
*James, K. G. H., Montreal, Q
Read, R. A.,

Ryan, Percy C., Montreal, Q
Sanderson, Albert E.,
Stevenson, J. A.,
*Tener, Richard, Montreal, Q
Tunstall, Charles A., Montreal, Q

*Judge, Percival E., Montreal, Q
Maynard, Moise, Ste. Brigide, Q

St. Aubin, T. S., Ste. Philomène, Q

Baillie, J. E. S.,
Hausen, T., Montreal, Q

*Mitchell, Thos. A., Linder, N.S
Tripp, Frederick, Spenceville, O

SPECIAL COURSE FOR WOMEN.

Undergraduates.

FIRST YEAR.

Names.	*School.*	*Residence.*
Ballantyne, Jessie,	G. H. S., Montreal,	Montreal, Q.
Botterell, Florence A.,	Trafalgar Institute, Montreal,	Montreal, Q.
Brittain, Isabel J.,	G. H. S., Montreal,	Montreal, Q.
Carter, Agnes A.,	Cowansville Academy,	Cowansville, Q.
Fairclough, Lizzie M.,	Hamilton Collegiate Institute,	Hamilton, O.
Jackson, Annie,	Misses Symmers and Smith,	Montreal, Q.
James, Agnes S.,	McGill Normal School, Montreal,	Montreal, Q.
Lee, Mabel,	H. S., Quebec,	Quebec, Q.
LeRossignol, Mary,	G. H. S., Montreal,	Montreal, Q.
Millar, Edith N.,	McGill Normal School,	Montreal, Q.
Mills, Jennie,	Stanstead College,	Montreal, Q.
Reay, Janet,	McGill Normal School,	Melbourne, Q.
Seymour, Matilda,	Mrs. Lay's School,	Montreal, Q.

SECOND YEAR.

Names.	*School.*	*Residence.*
Angus, Frances R.,	G. H. S., Montreal,	Montreal, Q.
Boright, Mabel,	Sutton Ac.,	Sutton, Q.
Campbell, Kate M.,	G. H. S., Montreal,	Montreal, Q.
Campbell, R. F.,	McG. Normal School,	Montreal, Q.
Davidson, Clara F. M.,		Frelighsburg, Q.
Hunt, Louisa E.,	McGill Normal School,	Lennoxville, Q.
Leach, Milda,	Misses Symmers & Smith,	Montreal, Q.
Lyman, Helen W.,	G. H. S., Montreal,	Montreal, Q.
McCoy, Emma C.,	Huntingdon Ac., Q.,	Rockburn, Q.
MacDonald, Minnie L.,	G. H. S., Montreal,	Montreal, Q.
Mewhort, Louise,		St. Anne, Q.
Mooney, Caroline J.,		Montreal, Q.
Pitcher, Ethelwyn,	H. S., Morrisburg,	Montreal, Q.
Raynes, Ethel,	G. H. S., Montreal,	Montreal, Q.
Ross, Jessie K.,	G. H. S., Montreal,	Montreal, Q.
Tatley, Eleanor,	Private Tuition,	Montreal, Q.

THIRD YEAR.

Hall, Bessie,	Montreal, Q	Pattison, Mary L.,	Clarenceville, Q
McGregor, E. B.,	Montreal, Q	Robins, Lilian B.,	Montreal, Q
McMillan, Helen,	Montreal, Q	Smith, G. Louise,	Montreal, Q
Moffatt, Eva L.,	Gananoque, O		

FOURTH YEAR.

Abbott, Maude M.,	St. Andrew's, Q	Henderson, Mary J.,	Montreal, Q
Binmore, Elizabeth,	Montreal, Q	Macfarlane, Mira,	Montreal, Q
Botterell, H. Inez R.,	Montreal, Q	Scott, Sara B.,	Montreal, Q
Botterell Jeanie T.,	Montreal, Q	Williams, Annie,	Montreal, Q
Derick, Carrie M.,	Clarenceville, Q		

Partial.

Macdonald, Jessie H.,		McFee, Donalda, B.A.	
Finley, Greta,	Montreal, Q		

Occasional.

Abbott, Alice F. M.,	St. Andrew's, Q	Seymour, Julia L.,	Montreal, Q
Brown, Jessie,	Montreal, Q	Squire, Maud M., B A.,	Cote St. Antoine, Q
Hendrie, Lillian M.,	Cote St. Antoine, Q		
Kirk, Mabel,	Montreal, Q	Stone, Alice,	Montreal, Q
Mackeand, Kate,	Montreal, Q		
Ames, Mary C.,	Montreal, Q	Linton, Florence,	Montreal, Q
Bagg, Helen F.,	Montreal, Q	Mattice, Brenda,	Montreal, Q
Bazin, Lydia C.,	Montreal, Q	Macfarlan, Jessie,	Montreal, Q
Blachford, Agnes C.,	Montreal, Q	McGowan, Ada A.,	Montreal, Q
Bremner, Jennie M.,	Montreal, Q	Monk, Isa M.,	Montreal, Q
Campbell, E. M.,	Montreal, Q	Mussen, Ethel I.,	Montreal, Q
Darey, Hattie,	Montreal, Q	Prentice, Annie E.,	Montreal, Q
Dawson, Winifred,	Montreal, Q	Radford, Annie E.,	Montreal, Q
Dyer, Evelyn,	Montreal, Q	Scott, Julia A.,	Newark, N.J., U.S.
Hanson, Alice M.,	Montreal, Q	Sinclair, Constance M.,	Montreal, Q
Holden, Ella E ,	Montreal, Q	Sinclair, Minnie H.,	Montreal, Q
Holland, Gertrude,	Montreal, Q	Stewart, Jessie W.,	Montreal, Q
Johnson, H.,	Montreal, Q	Trenholme Florence T.,	Cote St. Antoine, Q
Johnson, Nugent,	Montreal, Q		
Lawless Lucinda,	Montreal, Q		
Blackader, Helen	Montreal, Q	Kennedy, L. Marion,	Montreal, Q
Dawson, Hilda,	Montreal, Q	Turner, Edith,	Montreal, Q
Cochrane, Elizabeth M.,	Montreal, Q	Evans, Mabel N.,	Montreal, Q
Duggan, Mildred S.,	Montreal, Q		

MORRIN COLLEGE, QUEBEC.

Undergraduates.

Blue, John H. F.,	Metis, Q.	Logie, Edward S.,	Leeds, Q.
Brodie, A.,	Quebec, Q.	Macadam, Bessie,	Glasgow, Scot.
Brown, Martha Lucinda,	Quebec, Q.	Macadam, Maggie,	Glasgow, Scot.
Chambers, E. T. C.,	Granby, Q.	McCullough, Robert,	Inverness, Q.
Drum, Lorne,	Quebec, Q.	McHarg, Robert J.,	Quebec, Q.
Gale, Ethel,	Quebec, Q.	McLeod, Thos. G.J.McT.,	Chatham, N.B.
Lindsay John,	Danville, Q.	Sloane, Samuel T.,	Quebec, Q.
Livingstone, Neil,	Hampden, Q.	Tanner, John F. E.,	Levis, Q.

Occasional Students.

Duchêne, Henri J.		Polley, John	
Hardy, John		Rattray, David John	
McDonald, Simon	Quebec, Q.		

ST. FRANCIS COLLEGE, RICHMOND.

Undergraduates.

Coburn, A. B.,	Melbourne, Q	Lyster, N. C.,	Montreal, Q
Dickson, Sydney,	Trenholmville, Q	Lyster, H. F.,	Montreal, Q
Dickson, E. T.,	Kingsey, Q	McHang D.,	Maple Hill, Q
Ewing, T. A.,	Coaticook, Q	McKenzie, T. F.,	Richmond, Q
Fraser, Hortense C.,	Durham, Q	McKenzie, L. F.,	Richmond, Q
Fraser, H. N.,	L'Avenir, Q	Moore J. G.,	Kingsey, Q
Hewitt, Edith,	London, Ont.	Prendergast, A. R.,	Montreal, Q
Howard, C. M.,	Wolfe Island, Q		

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

Barnes, Howard Turner, Montreal
Bowden, William Arthur, Richmond, Q
Cochrane, John Dougall, Montreal
Costigan, James Shearer, Montreal
Dawson, Alexander Scott, Pictou, N.S.
Greenberg, Louis, Montreal
Gunn, Robert A., Montreal
Herdt, Henry, Montreal
Herdt, Louis, Montreal
Holman, Robert Claude, Summerside, P. E. I.
Lambert, Frank, London, Eng.
Massey, Arthur W. K., Montreal
Murphy, David A., Montreal
Taylor, Richard Nutting, Charlottetown, P. E. I.

SECOND YEAR.

Adams, Walter Chamblet, Montreal
Bolton, Ellsworth, Listowel, O
Copeland, Louis Benjamin, Berthier, Q
Cunningham, William Norton, Montreal
Featherston, John Hamilton, Montreal
Fraser, William Foster, Pembroke, O
Kingston, C. B., Montreal
Klock, Alonzo, Aylmer, Q
Lawrie, William Pitt, Quebec
Le Rossignol, Peter Henry, Montreal
MacFarlane, Walter Douglas, Montreal
McGregor, John Murray, Montreal
McLeod, Thos. M., Georgetown, P.E.I.
Murphy, Peter James, Quebec
Pink, Lawrence Naismith, Pembroke, O
Rankin, John, Montreal
Rutherford, Forest, Montreal
Ryan, Arnold James, Rouse's Point, N.Y.
Simpson, Lincoln, Cavendish, P.E.I.
Smart, W. C. Gregory, Hamilton, O
Turner, John Alexander, Hamilton, O
Wainwright, Jas. Geo. R., St. Andrews, Q.
Warren, William Henry, Montreal

THIRD YEAR.

Bickerdike, Robert, Montreal
Bulman, William Jardine, Sweetsburg, Q
Middleton, Percy Howe, Montreal
Ramsay, Henry Martyn, Montreal
Russell, Hugh Yelverton, Montreal
Schwitzer, John Edward, Ottawa
Stone, Ernest Albert, Montreal
Stuart, Henry B., Montreal
Walker, William Henry H., Montreal
Williams, Miles Lawrence, Montreal
Wingham, Thomas Henry, Montreal

FOURTH YEAR.

Calvert, Sidney, Rochdale, Eng.
Denison, William Simeon, Denison's Mills, Q
Ellacott, Charles Herbert, Montreal
Evans, Percy Norton, Montreal
Hawkins, Albert Howard, Listowel, O
Jamieson, Harry Robert, Montreal
Lea, Richard Smith, Crapaud, P.E.I.
Mattice, Ernest Edward S., Cornwall, O
Mooney, George Walworth, Montreal
Redpath, Peter Whiteford, Montreal
Reed, Chester Bowditch, Chicago, U S.A.
Smaill, William, Montreal
Shuttleworth, Arthur E., Mount Albert, O

Partial Students.

Churchill, John Howard, Coaticook, Q
Darling, Edward, Montreal
Drummond, George L. P., Montreal
Dudderidge, William, Lachute, Q
Ellenwood, William R., Yarmouth, N.S.
Gurd, Charles C., Montreal
Herdt, George, Montreal
Jackson, F. S., Montreal
Kirkpatrick, John J., South Hadley Falls, U S.A.
Lorway, John Muir, Sydney, C.B.
Purves, J. G., North Sydney, C.B.
Stearns, C. F., Montreal
Stevenson, James A., South Granby Q.
Tighe Jas., South Hadley Falls, U.S.A.

FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

Barton, Frank J., Lennoxville, Que
Bolger, D. L., Cambridge, Mass., U.S.
Brodie, H., jr., Montreal, Que.
Cannon, A. G. C., Milwaukee, Wis, U.S.
Comstock, D. B., Miles City, Mont., U.S.
Crossman, Geo. S., Brushton, N.Y., U.S.
Darling, Andrew, Montreal, Que.
Dunton, H. B., Richmond, Que.
Dyer, R. E., Boston, Mass., U S
Ewing, Jas. A., Montreal, Que.
Gangloff, G. E., Buffalo, N.Y., U. S.
Gorham, A. W., Alstead, N.H., U S.
Hadley, Andrew, North Georgetown, Que.
Hayman, J. M., Boissevain, Man.
Henderson, E. P., Chelsea, Mass., U.S.
Higginson, C. M., L'Orignal, Ont.
Joel, C. L., Fitchburg, Mass, U.S.
Lamb, A. S., Montreal, Que.
Lathrop, Virgil, Albany, N.Y., U.S.
Lee, Geo. H., Brighton, Mass., U.S.
Lofgren, O. C., Sauk Centre, Minn., U.S.
Macaulay, G. E., Salem, N.Y., U.S.
MacMartin, A. P., St. Andrews, Que.
McCrank, J. A., Plantagenet, Ont.
McDonald, D. M., Laggan, Ont.
McDonald, T. B., Boston, Mass, U.S.
McDougall, James, Montreal, Que.
McGlue, J., Lynn, Mass, U.S.
McNaughton, D. D., Laggan, Ont.
Moffatt, Sam., Ormstown, Que.
Moffett, Joe N., Kingfisher, I.T., U.S.
Miller, Geo. A., Granby, Que.
Perley, H. S., Ottawa, Ont.
Plaskett, Joseph, Montreal, Que.
Pote, Thomas, New Harmony, Ind., U.S.
Ramsay, R. A., Eden Mills, Ont.
Rathburn, J. S, Montreal, Que.
Robb, Ed. M., Montreal, Que.
Robertson, A. T., Howick, Que.
Seale, J. H., Granby, Que.
Scanlan, H., Montreal, Que.
Scott, Jas F., Cote St. Michel, Que.
Simpson, T. C., St. Andrews, Que.
St. Louis, D, Ormstown, Que.
Sturrock, Thos., Laggan, Ont.
Townsend, Geo., New Glasgow, N.S.
Twombly, S.S., Fayetteville, Arkansas, U.S.
Walsh, R. N., Huntingdon, Que.
Watson, John, Beauharnois, Que.
Wells, Geo. P., Cochrane, N.W.T.
Willyoung, L. E., Albion, N.Y., U.S.

SUMMARY.

Students in Law, McGill College			18
" in Medicine "			258
" in Arts "			
Men	Undergraduates	137	
	Partial	33	
	Occasional	39	
Women	Undergraduates	45	
	Partial	3	
	Occasional	43	300
" in Arts, Morrin College, Undergraduates and Partial			23
" " St. Francis College, Undergraduates			15
" Applied Science, McGill College:—			
	Undergraduates	61	
	Partial	14	75
" Veterinary Science			51
Total number of Students			740
Deduct entered in two Faculties			4
			736
McGill Normal School Teachers-in-training			86
Total			822

School Examinations.

STANDING IN THE EXAMINATIONS 1890.

ASSOCIATES IN ARTS.

I. *Candidates under 18 years of age.*

Class I.

No.			
5.	William W. Craig (High School, Montreal),	equal,	1210 Marks
8.	William A. Duff (High School, Montreal),		
46	M. Gertrude Summerhayes (Girls' High School, Montreal),		1146 "
19.	Herbert Molson (High School, Montreal),		1142 "
12.	John Jenkins (High School, Montreal),		1120 "
17.	Ralph B. McDunnough (High School Montreal),		1108 "

Class II.

35.	Lilian N. Evans (Girls' High School, Montreal),		1076 "
25.	Fred. D. Rogers (High School, Montreal),	equal,	1048 "
55.	Robert M. Harper (High School, Quebec),		
30.	Robert Wilson (High School, Montreal),		1039 "
41.	Ethel S. Radford (Girls' High School, Montreal),		1028 "
56.	Henry N. Thomson (High School, Quebec),		1025 "
43.	Margaret E. Robinson (Girls' High School, Montreal),		1022 "
1.	Charles E. B. Adams (High School, Montreal),		1015 "
27.	Christie M Shaw (High School, Montreal),		1007 "
14.	George S. Lovejoy (High School, Montreal),		1002 "
2.	Walter L. Barlow (High School, Montreal),		996 "
21.	Arthur L. Mudge (High School, Montreal),		967 "
114.	William A. Moffatt (Huntingdon Academy),		965 "
84.	Alice J. Griggs (Coaticook Academy),		958 "
139.	Osmond E. LeRoy (Lachute Academy),		945 "
10.	Leonard W. Dyer (High School, Montreal),		944 "
11.	F. A. Hogle (High School, Montreal),		935 "
175.	Edith Hargrave (Sherbrooke Girls' Academy),		923 "
20.	Henry S. Mooney (High School, Montreal),		921 "
53.	David T. Davis (Private Tuition),		904 "
26.	Alexander E. Shaw (High School, Montreal),		903 "

Class III.

170.	Ralph E. Howe (Sherbrooke Boys' Academy),	888 "
180.	Katherine Robinson (Stanstead Wesleyan College),	887 "
28.	Henry J. M. Smith (High School, Montreal),	881 "
42.	Ethel H. Reid (Girls' High School, Montreal),	866 "
90.	Edith M. Ayerst (Cookshire Model School),	804 "

36.	Muriel G. Galt (Girls' High School, Montreal),	856	Marks
177.	Louise E. Johnston (Sherbrooke Girls' Academy),	844	"
68.	Harriott S. Olive (Girls' High School, St. John, N.B.),	839	"
143.	William Mitchell (Lachute Academy),	833	"
209.	Gertrude M. Slack (Waterloo Academy),	830	"
147.	Thomas I. Pollock (Lachute Academy),	825	"
83.	James H. Doak (Coaticook Academy),	821	"
32.	John B. Norton (High School, Montreal),	811	"
190.	George N. Boright (Sutton Model School),	807	"
18.	Thomas H. Metcalfe (High School, Montreal),	800	"
95.	Ruth E. Boright (Cowansville Academy),	799	"
37.	Jessie S. Harvie (Girls' High School, Montreal),	796	"
59.	Emily E. Lee (Girls' High School, Quebec),	790	"
171.	Robert Knight (Sherbrooke Boys' Academy),	784	"
49.	Florence M. Simms (Misses Symmers and Smith's School, Montreal),	780	"
133.	Hanam H. Barclay (Lachute Academy),	778	"
112.	Sarah McDonald (Huntingdon Academy),	777	"
7.	Arnold W. Duclos (High School, Montreal), } equal,	774	"
29.	Edward S. Wadsworth (High School, Montreal), }		
6.	Percy H. Cushing (High School, Montreal),	773	"
125.	Grant S. Johnson (Inverness Academy),	772	"
63.	Isabelle Estabrook (Girls' High School, St. John, N.B.),	767	"
207.	Elizabeth J. Lufkin (Waterloo Academy),	764	"
44.	Lilian M. Sharpe (Girls' High School, Montreal),	760	"
155.	Charles W. Candlish (St. Francis College School, Richmond),	741	"
158.	Howard F. Lyster (St. Francis College School),	740	"
61.	Elizabeth Beatteay (Girls' High School, St. John, N.B.), } equal	737	"
141.	Hugh C. McConnell (Lachute Academy), }		
3.	William L. Bond (High School, Montreal),	732	"
92.	William H. A. Hopkins (Cookshire Model School),	726	"
110.	Ernest G. Campbell (Huntingdon Academy),	725	"
66.	Celia G. Heffer (Girls' High School, St. John, N.B.),	721	"
109.	Nellie F. Cameron (Huntingdon Academy),	715	"
54.	Maggie G. Murphy, (Private Tuition),	714	"
34.	Annie Cox (Girls' High School, Montreal),	709	"
106.	Louisa H. Chalmers (Granby Academy),	704	"
40.	Alice E. Nichols (Girls' High School, Montreal),	695	"
98.	Agnes B. Tarrant (Cowansville Academy),	689	"
93.	Edith M. Miller (Cookshire Model School),	684	"
4.	Dorlon T. Buchanan (High School, Montreal),	674	"
39.	Jeanie C. McLea (Girls' High School, Montreal),	657	"
132.	Percy Stevens (Knowlton Academy,	656	"
121.	Frederick E. Edwards (Inverness Academy),	655	"

60. Louisa G. Moses (Girls' High School, Quebec), 654 Marks
24. Thomas J. Rodger (High School, Montreal), 652 "
208. William A. Ryan (Waterloo Academy), 632 "
65. Edna M. Gregory (High School, St. John, N.B.), 620 "
178. Sarah K. Turner (Sherbrooke Girls' Academy), 617 "
69. Loretta L. Shaw (Girls' High School, St. John, N.B.), 611 "
15. W. B. Macpherson (High School, Montreal), 608 "
182. Clarissa J. Lewis (St. Johns High School), 604 "
134. Sarah Bradshaw (Lachute Academy), 591 "
138. Nettie M. Giles (Lachute Academy), 586 "
126. Barbara M. McVetty (Inverness Academy), 581 "
195. Fred. W. Harvey (Sutton Model School), 530 "

II. *Over* 18 *years of age.*

Class II.

23. Adam F. Patterson (High School, Montreal), 1015 "
172. Albert L. Parker (Sherbrooke Boys' Academy), 1011 "
210. Jenniefried P. Solomon (Waterloo Academy), 953 "
127. Donald M. Solandt (Inverness Academy), 937 "

Class III.

9. H. H. Dyer (High School, Montreal), 884 "
115. Amanda Robson (Huntingdon Academy), 882 "
57. Ethel V. Fraser (Girls' High School, Quebec), 845 "
67. Maggie Morrow (Girls' High School, St. John, N.B.), 835 "
45. S. Louise Shaw (Girls' High School, Montreal), 825 "
62. Margaret M. Brady (Girls' High School, St. John, N.B.), 801 "
111. Robert I. Gillies (Huntingdon Academy), 798 "
203. Effie J. Frost (Waterloo Academy), 786 "
116. Donald Walker (Huntingdon Academy), 781 "
85. Frederick C. McKee (Coaticook Academy), } equal 777 "
119. Rebecca Coulter (Inverness Academy), }
206. Ruth E. Libby (Waterloo Academy) 774 "
191. Frank L. Doray (Sutton Model School), 761 "
148. Stanfel F. A. Wainwright (Lachute Academy), 759 "
291. Archer Booth (Waterloo Academy), 756 "
50. May Gertrude Johnson (Mrs. Watson's School, Montreal), 754 "
212. Mary Olive Vaudry (Waterloo Academy), 747 "
64. Lillian E. Fenwick (Girls' High School, St. John, N.B.), 712 "
140 Robert Mason (Lachute Academy), 689 "
78. Joseph L. Mulligan (Aylmer Model School), 662 "
70 Agnes L. Warner (Girls' High School, St. John N.B.), 647 "
122. Gardiner Grady (Inverness Academy), 635 "
196. Alfred C. Paintin, (Sutton Model School), 631 "

58 Alice Gillespie, (Girls' High School, Quebec), 612 Marks
162. John G. Moore (St. Francis College School), 610 "
100. Hannah L. Bradley (Danville Model School), 601 "
156. James E. Church (St. Francis College School), 559 "
77. Emma Maxwell (Aylmer Model School), } equal 557 "
52. Francis A. C. Bickerdike (Private Tuition), }

JUNIOR CERTIFICATES.

I. Under 18 years of age.

91. Clara M. M. Bailey (Cookshire Model School), 647 "
31. Cecil Wotherspoon (High School), Montreal, 639 "
128. Mary Stewart (Inverness Academy), 601 "
202. Isabella F. Frost (Waterloo Academy), 590 "
123. Maggie Hanran (Inverness Academy), 552 "
129. Elizabeth O. Wood (Inverness Academy), 542 "
71. Alice M. Wilson (Girls' High School, St. John, N.B.), 525 "
183. G. Melville Macpherson (St. Johns High School), 446 "

II. Over 18 years of age.

166. Ernest W. Hodgins (Shawville Academy), 633 "
17. Christina C. Bailey (Inverness Academy), 490 "

McGILL UNIVERSITY, MONTREAL.

JUNE, 1890.

The following candidates have passed the Examinations required for Matriculation.

I. In Arts.

Barlow, Walter L.,	Montreal, Q	Estabrooke, Isabelle,	St. John, N.B
Beatteay, Elizabeth,	St. John, N.B	Fraser, Ethel V.,	Quebec, Q
Brackett, John,	Huntingdon, Q	Frost, Ellie J.,	Waterloo, Q
Booth, Archer,	Waterloo, Q	Frost, Isabella F.,	Waterloo, Q
Boright, Ruth E.,	Cowansville, Q	Galt, Muriel G.,	Montreal, Q
Brady, Margaret M.,	St. John, N.B	Gillespie, Alice,	Quebec, Q
Campbell, Edward M.,	Inverness, Q	Gillies, Robert L.,	Huntingdon, Q
Campbell, Ernest G.,	Huntingdon, Q	Griggs, Alice J.,	Coaticook, Q
Chalmers, Louisa H.,	Granby, Q	Hanran, Robert J.,	Inverness, Q
Church, Athole H.,	Montreal, Q	Hargrave, Edith,	Sherbrooke, Q
Craig, William W.,	Montreal, Q	Harper, Robert M.,	Quebec, Q
Crawford, Dan T.,	Parkhill, O	Harvey, Fred. W.,	Sutton, Q
Cruikshank, Alexander,	Inverness, Q	Hurvie, Jessie S.,	Montreal, Q
Davis, David T.,	Montreal, Q	Howe, Ralph E.,	Sherbrooke, Q
Day, Frank J.,	Stratford, O	Jamieson, William R.,	Ottawa, Q
Doray, Frank L.,	Sutton, Q	Johnson, May T.,	Montreal, Q
Duclos, Arnold W.,	Montreal, Q	Johnston, Louise E.,	Sherbrooke, Q
Dyer, H. H.,	Montreal, Q	Keith, Neil D.,	Glencoe, Q

Lee, Emily E.,	Quebec, Q
LeRoy, Osmond E.,	Lachute, Q
Libby, Ruth E.,	Waterloo, Q
Lochead, John,	Parkhill, O
Lovejoy, Geo. S.,	Montreal, Q
Lufkin, Elizabeth J.,	Waterloo, Q
Mason, Robert,	Lachute, Q
Maxwell, Emma,	Aylmer, Q
McConnell, Hugh C.,	Lachute, Q
McMullan, John,	Huntingdon, Q
Mitchell, William,	Lachute, Q
Moffatt, William A.,	Huntingdon, Q
Morrow, Maggie,	St. John, N.B
Murphy, M. Grace,	Montreal, Q
Olive, Harriott S.,	St. John, N.B
Oliver, Lucy A.,	Cowansville, Q
Paintin, Alfred C.,	Sutton, Q
Parker, Albert L.,	Sherbrooke, Q
Pollock, Thomas I.,	Lachute, Q
Radford, Ethel S.,	Montreal, Q
Robinson, Katherine,	Stanstead, Q
Robinson, Margaret E,	Montreal, Q
Robson, Amanda,	Huntingdon, Q
Sharpe, Lillian M.,	Montreal, Q
Shaw Alex. E.,	Montreal, Q
Shaw, Christie M.,	Montreal, Q
Shaw, S. Louise,	Montreal, Q
Simms, Florence M.,	Montreal, Q
Slack, Gertrude M.,	Waterloo, Q
Smith, Henry J. M,	Montreal, Q
Solomon, Jennicfried P.,	Waterloo, Q
Spearman, F. L,	Huntingdon, Q
Strong, J.,	Montreal, Q
Summerhayes, M. Gertrude,	Montreal,, Q
Tarrant, Agnes B.,	Cowansville Q
Thomson, Henry N.,	Quebec Q
Turner, Sarah K ,	Sherbrooke' Q
Vaudry, Mary O.,	Waterloo' Q
Walker, Donald,	Huntingdon, Q
Warner, Agnes L.,	St. John, N. B

II. In Applied Science.

Adams Chas. D.,	Montreal, Q
Barclay, Hanam H.,	Lachute, Q
Bond, William L ,	Montreal. Q
Boright, George N.,	Sutton, Q
Candlish, Charles W.,	Richmond, Q
Carron, Fred. B.,	Brockville, O
Clendenning, Charles H.,	Ottawa, O
Coburn, David N.,	Richmond, Q
Cochrane, Kenneth C.,	Brockville, O
Connor, Charles A.,	Ottawa, O
Crawford, John,	Toronto, O
Cushing, Percy H.,	Montreal, Q
Doak, James H.,	Coaticook, Q
Duff, William A.,	Montreal, Q
Dyer, Edward O.,	Sutton, Q
Dyer, Leonard W.,	Montreal, Q
Eastman, Arthur C.,	Sutton, Q
Edwards, Frederick E.,	Inverness, Q
Galbraith, Archibald,	Toronto, O
Grady, Gardiner,	Inverness, Q
Hopkins, William H. A.,	Cookshire, Q
Jenkins, John,	Montreal, Q
Johnson, Grant S.,	Inverness, Q
Knight, Robert,	Sherbrooke, Q
Lindsay, Cecil V.,	Montreal, Q
Lineham, D. M.,	Goderich, O
Lyster, Howard F.,	Richmond, Q
McDunnough, Ralph B.,	Montreal, Q
McHarg, David,	Richmond, Q
McKee, Frederick C.,	Coaticook, Q
McNaughton, Frs. M. A.,	Huntingdon, Q
Metcalfe, Thomas H.,	Montreal, Q
Molson, Herbert,	Montreal, Q
Mooney, Henry S.,	Montreal, Q
Moore, John G.,	Richmond, Q
Mudge, Arthur L.,	Montreal, Q
Mulligan, Joseph A.,	Aylmer, Q
Norton, John B.,	Montreal, Q
Ogilvy, Charles,	Montreal, Q
Rodger, Thomas J.,	Montreal, Q
Rogers, Fred. D.,	Montreal, Q
Ryan, William A ,	Waterloo, Q
Solandt, Donald M.,	Inverness, Q
Stevens, Percy,	Knowlton, Q
Struthers, Arthur J.,	Clarenceville, Q
Wilson, Robert,	Montreal ,Q

STANDING IN THE SEVERAL SUBJECTS.

[The numbers correspond with those in the preceding list. Candidates whose numbers are in parentheses are equal in standing. Those preceding a single asterisk have obtained at least two-thirds of the marks, those preceding a double asterisk at least one-half, those following at least one-third. Numbers 1-15 and 17-32 are from the Montreal High School ; 34-47 from the Girls' High School, Montreal ; 49 from the Misses Symmers and Smith's School, Montreal ; 50 from Mrs. Watson's School, Montreal ; 51 from St. John's School, Montreal ; 52-54 Private Tuition ; 55-56 from Quebec High School ; 57-60 from Girls' High School, Quebec ; 61-71 from Girls' High School, St. John (N.B.) ; 75-79 from Aylmer Model School ; 80-82 from Clarenceville Academy ; 83-88 from Coaticook Academy ; 89 from Compton Ladies' College ; 90-94 from

Cookshire Model School ; 95-97, 98 from Cowansville Academy]; 99-104 from Danville Model School ; 105 from Dunham Ladies' College ; 106-107 from Granby Academy ; 108-116 from Huntingdon Academy ; 117-129 from Inverness Academy ; 130-132 from Knowlton Academy ; 133-144, 146-148 from Lachute Academy ; 149 from Lacolle Academy ; 150-153 from Portage du Fort Model School ; 154-159, 161-165 from St. Francis College School, Richmond ; 166-169 from Shawville Academy ; 170-173 from Sherbrooke Boys' Academy ; 174-178 Sherbrooke Girls' Academy ; 179-180 from Stanstead Wesleyan College; 181-187 from St. Johns High School ; 189-198 from Sutton Model School ; 199-200 from Three Rivers Academy ; 201-203, 205-212 from Waterloo Academy ; 213-215 from Waterville Model School ; 217 from Hatley Academy.]

I. Preliminary.

Reading.—[At Montreal—(23, 35, 42, 49), 26, (8, 21, 24, 34, 39, 45, 46, 52), 41, (3, 17, 20, 27, 51), (1, 5, 10, 12, 14, 19, 32, 36, 37, 38, 40, 44, 54), (2, 4, 6, 7, 9, 11, 13, 15, 18, 22, 25, 28, 29, 30, 31,43,47, 50,53)]. [At Quebec.—(Boys).—(55,56) ; (Girls.)—58,59,57,60]. [At St. John (N.B. —(61, 63, 65, 67. 70), (62, 64, 66, 68, 69), 71]. [At Aylmer.—77, (76, 78), 79, 75]. [At Clarenceville.—82, 81, 80]. [At Coaticook.—86, 85, 84, 88, (83, 87)]. [At Compton —89]. [At Cookshire.—90, 93, 91, 94, 92]. [At Cowansville.—(95, 97), 98]. [At Danville.—100, (99, 101, 104), 102, 103]. [At Dunham.—105]. [At Granby.—106-107], [At Huntingdon.—(109, 112, 115), (10, 114, 116), (108, 111, 113)]. [At Inverness.—(119, 129), (120, 123, 128), (122, 124, 127), (117, 118), (121, 125), 126]. [At Knowlton.—132, 131, 130]. [At Lachute.—(138, 143), (133, 135, 141, 144, 147. 148), (136, 137, 140, 142, 146), (134, 139)]. [At Lacolle.—149]. [At Portage du Fort.—150, (151, 153), 152]. [At Richmond.—(156, 157, 158, 165), (155, 163), 162, 159, 164]. [At Shawville.—169, 168, 167, 166]. [At Sherbrooke, Boys,—170, 172, (171. 173) ; Girls.—175, 176, (177, 178), 174]. At Stanstead.—(179,180)]. [At St. Johns.—186, (181, 182,184), (183, 187), 185]. [At Sutton —194, (189, 198), (190, 191, 192, 193, 195), (196, 197)]. [At Three Rivers.—(199, 200)]. [At Waterloo.—212. (203, 209), 202, 207, (206, 208, 211), 201, 211, 205]. [At Waterville.—215, (213, 214)]. [At Hatley.—217].*

Writing.—(1, 34, 35, 37, 43, 44, 45, 64, 67, 68, 69, 70, 71, 84, 91, 124. 136, 137, 144, 148, 149, 154. 170, 181, 709, 215), (6, 9, 10, 23, 27, 29, 32, 36, 42, 50, 55, 59, 61, 62, 63, 77, 80, 82, 83, 86, 90, 92, 94, 105, 109, 131. 172, 183, 192, 212), (2, 3, 4, 5, 8, 11, 12, 19, 20, 22, 30, 38, 41, 46, 47. 52, 54, 65, 85, 88, 89, 93, 95, 98, 99, 100, 101, 103, 108, 110. 112, 115, 117, 119, 126, 128, 129, 132, 133, 135, 138, 155, 163, 164, 166, 173, 175, 180, 190, 191, 193, 195, 206, 210, 213, 214, 217).* (15, 18, 24, 28, 31, 39, 53, 56, 57, 58, 60. 66, 79, 81, 87, 97. 102, 107, 114, 116, 118, 121, 122, 127. 134, 139, 140, 142, 146, 147, 152, 156, 158, 159, 161, 167 177, 178, 182, 184, 185, 187, 189, 197, 198, 199, 200, 202, 205, 211), ** (7, 13, 14, 17, 21, 25, 26, 40, 49, 51, 75, 76, 78, 104, 106, 111, 113, 120, 123, 125, 130, 141, 143, 150, 151, 153, 157, 162, 165, 168, 169, 171, 174, 176, 179, 186, 194, 196, 201, 203, 207, 208).

English Dictation.—(27, 61, 66, 120, 202, 203, 209), (28, 59, 128, 131), (62, 90, 93, 123) (8, 50, 52, 60, 65, 67, 85, 119, 124, 148, 170, 182, 195), (1, 12, 14, 17, 23, 41, 56, 69, 71, 80, 89, 94, 101,102, 114, 115, 121, 138, 141, 150, 157, 167, 175, 178, 180, 187, 210, 217), (6, 25, 42, 44, 47, 49, 53, 55, 58, 68, 98, 127, 132, 155, 169, 171, 172,174, 191, 207, 212), (20, 21, 27, 30, 34, 36, 57, 70, 77, 86, 104,106, 107, 109, 112, 133, 134, 144, 147, 177, 179, 183, 184, 193, 198, 206, 213), (3, 4, 11, 19, 38, 63, 84, 97, 99, 105, 111, 116, 117, 118, 126, 137, 140, 158, 163, 165, 176, 194, 201), (5, 18, 26, 35, 43, 46, 87, 91, 92, 100, 113, 125, 139, 145, 146, 156, 161), (10, 29, 64, 129, 135, 166, 192, 208), (24. 32, 40, 51, 78, 88, 149, 152, 154, 159, 173, 181), (2, 22, 83, 95, 136), (9. 39, 45, 54, 82, 110), (13, 15, 168, 196, 199), (76, 130, 186, 214), (31, 162, 190, 197), (122, 185), 7.*

English Grammar.—(5, 42, 43, 46, 97, 118), (21, 23, 40, 119), (17, 61, 62, 65, 90, 01, 124, 128, 175, 209.), (12, 30, 41, 44, 121). (25, 26, 35, 55, 125), (8, 29, 38, 63, 70, 84, 120, 123, 127), (6, 14, 53, 56, 139, 162, 170, 202), (3, 9, 11, 27, 36, 60, 66. 67, 71, 95, 104, 114, 117, 180), (19, 32, 45, 57, 68, 83, 85, 86, 93, 106. 133, 182, 203, 207, 210), (28, 49, 50, 93, 101, 143, 147. 155)*, (4, 34, 37, 54, 59, 115, 122, 156, 166, 167, 172, 193, 194), (7, 18, 24, 52, 134, 158), (2, 64, 89, 92, 103, 116, 174, 178, 190, (201), (69, 135, 142, 148, 159, 168, 171, 206), (87, 126, 129 141, 144, 173, 176, 183), (15, 20, 47, 137, 163, 191, 192, 205, 212, 213), (1, 100, 105, 107, 140, 177), (10, 22, 39, 88, 94, 111 113, 157,

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Geography.—(53, 139, 210), (69, 165,) (14, 46, 55, 90, 147), (19, 62, 68, 114, 120), (23, 28, 92), (9, 12, 58, 123, 125, 127, 134, 142, 172, 190), (8, 25, 30, 43, 47, 63, 67, 86, 95, 119, 136, 177) (2, 21, 22, 83, 84, 155, 156, 168), (36, 66, 70, 91, 115, 133, 163)*, (4, 5, 17, 24, 29, 35, 56, 97, 112, 128, 135, 143, 158, 166, 193), (45, 71, 109, 118, 141, 154, 173), (42, 49, 60, 111, 121, 124, 126, 138, 182, 207), (93, 103, 113, 140, 146), (26, 38, 40, 57, 59, 61, 65, 94, 110, 202, 203), (3, 34, 81, 212, 191, 196, 212), (7, 20, 27, 87, 98, 129, 162, 174), (1, 10, 37, 39, 41, 79, 105, 106, 148, 175, 181, 208)**, 18, 32, 77, 80, 89, 107, 108, 131, 149, 200, 201, 205), (6, 15, 50, 78, 85, 116, 144, 159, 170, 176, 183, 185, 199), (11, 64, 82, 117, 137, 194, 209, 214), (54, 157, 169, 187), (52, 75, 88, 151, 171, 213), (31, 100, 130, 167, 180, 184, 192), (99, 132 215), (44, 150, 152, 153, 178, 195, 206).

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The Gospels —5, (21, 172), 31, 26, 8, (27, 41), (46, 66, 175), (62, 67), 84, (23, 50), 69, (40, 43, 86), (1, 12, 28, 42), (4, 30 47), 25, 19, (15, 71), (39, 44, 83), (3, 29, 35, 36, 55, 59, 63), (6, 65, 93, 142), (2, 14, 45, 61, 90. 120, 134)*, (49, 124, 206, 213), (32, 200), 54, (20, 60, 135, 190), (58, 68, 194), (11, 34, 38, 64, 85), (70, 77, 80), (7, 22, 57, 118, 133), 170, (17, 37, 59, 106, 139, 177), (87, 107, 138), 10, 88, 94, 131), (89, 171, 180), (166, 215), (9, 24, 153, 173,**, (143, 168, 179), 132, 178, 214, 217), (105, 156), (18, 95, 148, 167), (97, 147, 191), (78, 130), (81, 92, 137, 182), (79, 199), (193, 197 198), 174, (76, 91), (114, 140, 149), (75, 110), (141, 146), 189.

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Latin (Ordinary).—139, 124, 97, 59, 114, (57, 84), 95, (115, 118, 134), (180, 182)*, (85, 201), (202, 206), 181, 83, (14, 143), (106, 111, 127, 175, 208, 212), (116, 120), (148, 155), (132, 147, 183, 193), (110, 157, 158), (60, 177), (98, 113), (190, 191)**, 156, (108, 165), (58, 138), (144, 159, 178), (179, 195, 199, 200, 205), 146, (125, 142, 166), 105, (176, 196), (107, 154, 164, 194), (77, 136), (167, 189), (78, 192).

Latin (Advanced) —5, 46, 23, (67, 68, 172), 53*, (55, 210), 61, (41, 63), 2, 30, 209, 63, (56, 65), (49, 71), 1, (28, 62, 207), (11, 43), (27, 36), (37, 45), 170, (26, 34), (14, 86)**, 3, 171, 9, 50, 40, 203, 54, (7, 15, 29), 38, (24, 52, 162), 16, 44.

Greek (Ordinary).—59, 60*, 139, (57, 201), 58, 170**, (116, 143, 147), 172, 191, 140, 110, (195, 196), 141, 146, (106, 164, 203), 142.

Greek (Advanced).—5*, 28, 124, (26, 53), 23, 56, 2, 118, 111, 114, 97**, 120, 55, 115, 9, 15, 52, 6, (14, 27), 7.

French.—175, (19, 176), 32, 17, 89), (49, 171), 172, (12, 28, 53), 178, 42, 1, 66*, (1, 29), (26, 30, 56,) 50, (38, 55), 46, (7, 8), 31, (4, 11, 27, 177, 210), (23, 212), (23, 212), 118, (3, 45, 203, 209), (43, 116, 131), 109, 182, (83, 124, 139, 180), (21, 201), (69, 141), 199, (20, 35, 90, 115, 132, 133), ** (34,

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German.—(12, 19), 17, 35, (8,42)*, 25, 20, 32, 47**, 18, 39.

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The Smithsonian Institute, "Bureau of Ethnology"—Bibliography of the Iroquoian Languages; Bibliography of the Muskogean Languages; The Circular, Square and Octagonal Earthworks of Ohio; the Problem of the Ohio Mounds, by Cyrus Thomas; Textile Fabrics of Ancient Peru, by W. H. Holmes.

From W. H. Winchell, State Geologist of Minnesota—17th Annual Report of the Geological Survey of Minnesota, Bulletin No. 1 ; History of Geological Surveys in Minnesota, Bulletin No. 5 ; Natural Gas in Minnesota.

From the University of Toronto—Examination Papers 1889.

The U. S. Government (War Department)—Weather Maps for January, February and March, 1890.

From Professor Bovey—Transactions Kansas Academy of Science, 1887-88 ; Reports (3) of the Director of the U. S. Mints ; Report on the Production of the Precious Metals in the U. S., 1884 ; Instructions and Regulations in relation to the U. S. Mints and Assay affairs, 1887 ; Bulletin de la Société Vaudroise des Ingénieurs et des Architectes, 1889 ; and 12 books on Mill Construction, Machine Shops, etc.

From the U. S. Government (Department of the Interior)—Bulletins of the U. S. National Museum, 5 parts.

From the author (Hon. Judge Gill)—Notes sur de Vieux Manuscrits Abenakis, 1886 ; Notes Historiques sur L'Origine de la Famille Gill, 1887 ; Notes Additionnelles sur la Famille Gill, 1889.

From J. M. Lemoine, Quebec—The Last Decade of French Rule at Quebec, 1749-1759 ; Parallèle historique entre le Comte de la Galissonière (1747-49) et le Comte de Dufferin (1872-78).

The Harbour Commissioners of Montreal—Annual Reports for 1889.

From Frederiks Universitets, Christiania—Calendar for 1888 and 1889.

American Society of Civil Engineers—Transactions for March and April, 1890.

From the author (R. W. McLachlan)—Canadian Numismatics, 1886 ; the Louisbourg Medals ; Canadian Numismatic Bibliography.

DONATIONS TO THE PETER REDPATH MUSEUM

FOR THE YEAR ENDING APRIL, 1890.

From The American National Museum, Washington—Collection of Cambrian fossils from Newfoundland.

From Mr. L. N. Bourgeois, Danville, P. Q.—Specimen of weathered vein.

From the Cowes Electric Smelting and Aluminium Co., Lockport, N. Y., per Dr. Waldo—Set of specimens of aluminium bronze.

From Mr. Horace T. Martin, Montreal—Specimens of Beaver cutting, chips and sticks, Maskinongé, P. Q., specimen of Polyporus ; specimen of Blastoidocrinus from Isle Bizard.

Mr. E. T. Chambers, Montreal—Specimens of Calcite from Mile End.

The Geological Survey, Ottawa—Specimens of Fossil plants from McKenzie river.

Mr Charles Gibb, B. A., Abbottsford, P. Q.—Specimens of Vesicular Trap and Monticulipora.

From Mr. T. W. Walsh, Ormstown, P. Q.—Three fossils from the Calciferous of Ormstown.

Lieut.-Col. Grant, Hamilton, Ont.—Collection of Niagara fossils.

From W. Symington Grieve, Edinburgh—Plate of egg and bone of the great Auk.

From Mr. E. T. Chambers, Montreal—Fossils from Lake St. John.

From Prof. D. P. Penhallow, Montreal—Collection of Marine Algæ and Maritime plants from the New England coast.

From Dr. R. J. B. Howard, B. A., London, England—Collection of European and Canadian Marine Algæ.

From Mr. W. L. Clay, B. A.—Two specimens of agatized wood from Arizona.

From Mr. H. Richardson Richards, Montreal—Specimens of tin ore, from St. Agnes de Cornwall.

From Mr. J. Bailly, Montreal—Prepared and mounted sterna of several species of birds.

From Mr. James Reid, of Blairgowrie, Scotland—Specimens of Pteriehthys and Estheria, from Devonian of Scotland.

From Principal Sir William Dawson—Specimens of corals from Manitoulin Island and Pleistocene plants from the Don river, collected by Mr. J. Townsend.

From the Hon. Sir Donald A. Smith—Eighteen mounted specimens of Canadian mammals and skeleton and skin of Musk ox.

From the Medical Faculty—Specimen of English lark and of parrot.

From Dr. Nichols—Tarantula, West Indies.

From Mr. R. D. Wilson—Specimen of natural grafting.

From Rev. H. A. Robertson, Erromanga—Collection of implements, weapons, etc., from the New Hebrides.

From Baron Von Mueller, Melbourne, Australia—Specimens of tertiary fruits, Ballarat.

From Mr. J. H. R. Molson and Mr. Charles Gibb.— Specimens of Crustacea and Fishes from Japan.

From Miss Carrie M. Derick—Specimens of minerals.

From Dr. G. P. Girdwood, Montreal—Specimens of African Camwood and Ebony.

From Mr. Robert A. Klock, B. A., Aylmer, P.Q.—Specimen of Moose (Alcos Americanus).

From Mr. W. E. Decks, B. A., Montreal—Crystallized Specimens of Iron Pyrites.

From Mr. James Baylis, Montreal – Specimens of Ostrea and Silicified wood from the Critaceous, South Saskatchewan.

From Mr. T. W. Wright, Los Angelos, Cal.—Specimens of Hydrozoa, etc.

From Mr. J. H. Ross, Montreal—Stalactite from St. Georges, Bermuda.

From Dr. B. J. Harrington, Montreal—Collection of Rocks from Porto Rico.

From Lieut.-Col. Grant, Hamilton, Ont.—Fucoids, Worm-burrows, etc., from the Clinton and Niagara formations, Hamilton.

From Miss Carrie M. Derich, Clarenceville, P.Q.—Specimens of Fossils from the Utica and Niagara formations.

From The Chalmers-Spence Company, New York—Collection of Asbestos Products.

From The Egyptian Exploration Fund and H. R. Ives, Esq., Hon. Secretary for Canada—Sculptured granite block from the Temple of Bubastis, Egypt.

From Mr. H. Hamilton, Hamilton—Group of Orthoclase Crystals from Renfrew, Ont.

Observatory.

Latitude, N. 45° 30′ 17″. Longitude, 4h 54m 18s.55.
Height above sea level 187 ft.

Superintendent.—C. H. McLeod, Ma.E.

Assistant Superintendent.—G. H. Chandler, M.A.

Assistant.—E. H. Hamilton, B.A.Sc.

Meteorological Observations are made every fourth hour, beginning at 3h 0m Eastern standard time; also at 8h 0m and 20h 0m. Independent bi-hourly temperature observations are also made. The principal instruments employed are the following:—Two standard mercurial barometers; one Kew standard thermometer; two Pastorelli thermometers; one maximum thermometer; one minimum thermometer; one set of six self-recording thermometers, with controlling clock, battery, etc.; two anemometers; one wind vane (wind-mill pattern): one anemograph, with battery, etc.; one sunshine recorder; one rain-band spectroscope; one rain gauge; and several spare thermometers.

The Anemometer and Vane are on the summit of Mount Royal, at a point about three-quarters of a mile north-west of the Observatory. They are 57 feet above the surface of the ground and 810 feet above sea level.

The Astronomical Equipment consists of:—The Blackman Telescope (6¼ in.); a photoheliograph (4½ in.); a 3¼ in. transit, with striding level; two 2 in. transits, arranged as collimating telescopes; one sidereal clock; one mean-time clock; one sidereal chronometer; one mean-time chronometer; one chronograph; batteries, telegraph lines and sundry minor instruments.

Observations for clock errors are made on nearly every clear night. Time exchanges are regularly made with the Toronto Observatory. Time signals are distributed throughout the city by means of the noon time-ball, continuous clock signals, and the fire alarm bells; and to the country, through the telegraph lines.

Observations of sun spots, for position and area, are made with the Blackman telescope and the photoheliograph.

The Blackman telescope is also employed in occasional work and for educational purposes.

University Gymnasium.

Instructor.—James Naismith, B. A.

The classes, which are open to Students of all the Faculties, will meet at the University Gymnasium, at hours to suit, as far as possible, the convenience of Students, and which will be announced at the commencement of the Session.

The Wicksteed Silver and Bronze Medals for Physical Culture (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the graduating class, and to students who have had instruction in the Gymnasium for two sessions; the silver medal to the former, the bronze medal to the latter.

The award of these medals is made by Judges, appointed by the Corporation of the University.

Every competitor for the silver medal is required to lodge with the Judges, before the examination, a certificate of good standing in the graduating class, signed by the Dean or Secretary of the Faculty to which he belongs, and the medal will not be awarded to any student who may fail in his examination for the degree.

Classes for the students of the Donalda Special Course for women will be conducted by Miss Barnjum.

University Societies.

THE GRADUATES' SOCIETY OF McGILL UNIVERSITY.

INCORPORATED 1880.

OFFICERS FOR 1890-91.

President:

W. T. Skaife, B.A.Sc.

Vice-President:

Miss J. Hunter, B.A.

Secretary:

Mr. Wellington Dixon, B.A.

Treasurer:

Prof. C. H. McLeod, Ma.E.

Resident Councillors: Rev. F. M. Dewey, M.A.; C. J. Fleet, B.A., B.C.L; G. S. Hall, B.A.; Octavin S. Ritchie, B.A.; W. Patterson, M.A.

Non Resident Councillors: James Grant, M.D.Sc., Ottawa; W. J. Sproule, B.A.Sc., British Columbia; J. J. McLaren, B.C.L., Toronto.

OTTAWA VALLEY GRADUATES' SOCIETY.

Hon. President:
SIR JOHN A. MACDONALD, K.C.B.
President:
SIR JAMES A. GRANT, M.D.
Vice-Presidents:
HENRY L. WRIGHT, M.D.
ROBERT CASSELS, B.A.
ROBERT A. KLOCK, B.A.
Treasurer:
J. H. BURLAND, B.A. Sc.
Secretary:
H. M. AMI, M.A.

Committee: R. Bell, M.D.; R. H. W. Powell, M.D.; G. F. Calder, B.A.; Rev. S. F. Rondeau, B.A.; John R. Church, M.D.; G. C. Wright, B.A.

UNIVERSITY LITERARY SOCIETY.

ESTABLISHED 1869.

OBJECTS.—The encouragement of Literary and Scientific pursuits, and the promotion of self-culture among the members.

President:
MR. A. R. OUGHTRED, B.C.L.

First Vice-President:
A. S. CROSS, B.A., B.C.L.

Second Vice-President:
R. A. DUNTON, B.C.L.

Corresponding Secretary:
J. M. FERGUSON, B.C.L.

Recording Secretary:
C. A. BARNARD, B.C.L.

Treasurer:
F. W. HIBBARD, B.A., B.C.L.

Councillors: Messrs. Selkirk Cross, McGoun, Fry, Mallie, Parmelee and Yates.

UNDERGRADUATES' LITERARY SOCIETY.

CONSTITUTED 1880.

President:
PEERS DAVIDSON.
1st Vice-President:
A. E. HARVEY.
2nd Vice President:
W. J. LEROSSIGNOL.

Secretary:
WM. OLIVER.
Assistant Secretary:
A. B. WOOD.
Treasurer:
A. C. SHUTTLEWORTH.

Special Committee: H. M. Kinghorn, A. H. Hawkins, G. W. McDougall, C. P. Ryan, A. Honeyman.

McGILL COLLEGE YOUNG MEN'S CHRISTIAN ASSOCIATION.

OBJECT.—To promote the piety of its members and the cause of Christianity in the University.

MEMBERSHIP.—The active Membership of the Association shall consist of Graduates and Students of the University who are members of some Protestant church. Any Graduate and Student of good moral character may become an associate member. A social reception is given to new students at the beginning of the session.

SESSION 1890-91.

Hon. President:
SIR J. W. DAWSON, LL.D.
President:
GALEN CRAIK, Arts, '91.

1st Vice-President:
A. I. MADER, Med., '91.
2nd Vice-President:
JAS. TAYLOR, Arts, '92.
Corresponding Secretary:
W. S. PRITCHARD, Arts, '92.
Recording Secretary:
W. R. ELLENWOOD, Arts, '91.
Treasurer:
R. O. ROSS, Arts, '92.
Assistant Treasurer:
W. W. ALEXANDER, Med., '91.

CHAIRMEN OF COMMITTEES:

Devotional:
W. F. HAMILTON, Med., '91.
Missionary:
G. S. CLENDINNEN, Arts.
Music:
W. F. COLCLOUGH, Arts, '90.
Social Purity:
W. E. DEEKS, Med., '93.
On Handbook:
I. A. GRAFTON, Med., '91.
Membership:
Arts. ED. ARCHIBALD, Arts, '92.
Med. H. N. GOFF, Med., '93.
Sc. F. LAMBERT, Science, '93.
Comp. Med. A. W. GORHAM, Comp. Med., '91.
Social:
A. R. HOLDEN, Arts, '91.
Bulletin:
A. McVICAR, Arts, '93.

McGILL UNIVERSITY ATHLETIC ASSOCIATION.

ESTABLISHED 1884.

Open for Membership to Undergraduates in this University.

President:
SIR WILLIAM DAWSON, LL.D.
Vice-President:
A. R. HALL, B.A.

Secretary:
D. B. HOLDEN, B.A.

Treasurer:
B. J. HARRINGTON, B.A., Ph. D

Assistant Treasurer:
J. T. WHYTE.

IN AFFILIATION.

McGill Football Club.
Secy.: W. GREGORY SMART.

McGill Hockey Club.
Secy.: H. Y. RUSSEL.

McGill Cricket Club.
Secy.: F. W. HIBBARD.

University Lawn Tennis Club.
Secy.: H. A. BUDDEN, B. A.

Donalda Lawn Tennis Club.
Secy: MISS M. N. EVANS.

Annual Field Meeting 17th October, 1890.

DELTA SIGMA SOCIETY.

ESTABLISHED 1884.

President: Carrie M. Derick.
Vice-President: Louise C. Smith.
Secretary-Treasurer: Ethelwyn Pitcher.
Assistant Secretary: Elizabeth Fairclough.
Committee: Misses Abbott, J. Botterell, Hall, Reay and Monk.

THEO DORA SOCIETY.

ESTABLISHED 1887.

Principal object for the present, the diffusion of information respecting Christian Missions, and the cultivation of a missionary spirit. Open for membership to students of the Donalda Special Course for women.

President: Annie Williams.
Vice-President: Eva Moffatt.
Secretary-Treasurer: Minnie MacDonald.
Committee: Misses Derick, Pattison, Ross and Millar.

GLEE CLUB.

ESTABLISHED 1887.

Manager: Elizabeth Binmore.
Secretary: Florence Botterell.
Committee: Misses Millar, Moffatt and Ross.

McGILL UNIVERSITY MUSICAL ASSOCIATION.

Honorary President.....SIR WILLIAM DAWSON, LL.D.
" *Secretary*.....B. J. HARRINGTON, Ph.D.
" *Treasurer*.....J. C. CAMERON, M.D.
Instructor.....MR. WM. BOHRER.

OFFICERS FOR SESSION 1889-90.

President.....NORMAN ANDERSON, Med., '92.
Secretary.....PEERS DAVIDSON, Arts, '90.
Treasurer.....A. E. SHUTTLEWORTH, Ap. Sc., '90.

Devoted to voice culture and to the practice of college and other songs. Membership open to all students in the University. Annual fee $2.00. Meetings of one hour and a half held weekly during the college session.

In connection therewith there is also a Glee Club composed of from twenty-five to thirty voices chosen from among the members of the Association and devoted to the practice of part songs and glees.

During the coming session it is intended to inaugurate an Annual University Concert. Music now forms part of the official programme at convocations, dinners and other public functions, and is furnished by the Association.

BENEFACTORS OF

McGill University, Montreal.

I. *Endowments and Subscriptions of the University and of the Faculty of Arts.*

1. ORIGINAL ENDOWMENT, 1811.

THE HONORABLE JAMES McGILL, who was born at Glasgow, 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the Estate of Burnside, situated near the City of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money unto the "Royal Institution for the Advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of His Majesty, King George the Third, to erect and establish a University or College, for the purpose of Education and the advancement of learning, in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the Colleges to be comprised in the said University should be named and perpetually be known and distinguished by the appellation of "McGill College."

The value of the above-mentioned property was estimated at the date of the bequest at.....$120,000

2. UNIVERSITY BUILDINGS, ETC.

THE WILLIAM MOLSON HALL, being the west wing of the McGill College buildings, with the connecting Corridors and Class Rooms, was erected in 1861, through the munificent donation of the founder whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880, and was formally opened to the public, August, 1882.

THE WILLIAM C. MCDONALD Physics building, the gift of William C. McDonald, Esq., announced by him as a gift to the University in 1890.

Lot for University building adjoining the College grounds, presented by J. H. R. Molson,—$47,000.

3. THE DONALDA ENDOWMENT FOR THE HIGHER EDUCATION OF WOMEN.

This endowment, given by the Honorable Sir Donald A. Smith of Montreal, is for the education of women in the subjects of the Faculty of Arts, up to the standard of the examination for B.A., in classes wholly separate, to constitute a separate Special Course or College for women,—$120,000.

4. ENDOWED CHAIRS, ETC.

THE MOLSON CHAIR OF ENGLISH LANGUAGE AND LITERATURE, in 1856, endowed by the Honorable John Molson, Thomas Molson, Esq., and William Molson, Esq., —$20,000.

THE PETER REDPATH CHAIR OF NATURAL PHILOSOPHY, in 1871, endowed by Peter Redpath, Esq.,—$20,000.

The Logan Chair of Geology, in 1871, endowed by Sir W. E. Logan, LL.D., F.R.S. and Hart Logan, Esq.,—$20,000.

The John Frothingham Chair of Mental and Moral Philosophy, in 1873, endowed by Miss Louisa Frothingham,—$20,000.

The Major Hiram Mills Chair of Classics, in 1882, endowed by the last will of the late Major Hiram Mills of Montreal,—$42,000.

The David J. Greenshields Chair of Chemistry and Mineralogy, in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal, with the sum of $40,000, half of which is devoted to the Faculty of Arts.

The William C. McDonald Chair of Physics, in 1890, endowed by William C. McDonald, Esq.,—$50,000.

The John Frothingham Principal Fund, to be invested for the endowment of the Principalship of the University; founded by the Rev. Frederick Frothingham and Mrs. J. H. R. Molson,—$40,000.

5. EXHIBITIONS AND SCHOLARSHIPS.

The Jane Redpath Exhibition, in the Faculty of Arts, $100 annually—founded in 1868 by Mrs. Redpath, of Terrace Bank, Montreal, and endowed with the sum of $1,667.

The McDonald Scholarships and Exhibitions, 10 in number, in the Faculty of Arts—founded in 1871, and endowed in 1882 with the sum of $25,000, by William C. McDonald, Esq.—Annual value, $1,250.

The Charles Alexander Scholarship, for Classics—founded in 1871 by Charles Alexander, Esq.—Annual value, $120.

The Barbara Scott Scholarship for Classical Language and Literature—founded by the last will of the late Miss Barbara Scott of Montreal, in the sum of $2,000, in 1884.—Annual value, $100.

The George Hague Exhibition—founded in 1881 in the Faculty of Arts.—Annual value $125.

The Major Hiram Mills Medal and Scholarship—in the Faculty of Arts, founded by the will of the late Major Hiram Mills of Montreal, and endowed with the sum of $1,500.—Annual value $75.

T. M. Thompson, Esq.—$250 for two Exhibitions in September, 1871; $200 for two Exhibitions in 1872,—$450.

Rev. Colin C. Stewart—for the "Stewart Prize in Hebrew,"—$60.

The Taylor Scholarship—founded in 1871, by T. M. Taylor, Esq.—Annual value $100—terminated in 1878.

Professor Alexander Johnson—for Scholarship for 3 Sessions, terminated 1886-7,—$350.

6. ENDOWMENTS OF MEDALS AND PRIZES.

In 1856 Henry Chapman, Esq., founded a gold medal, to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This Medal was endowed by Mr. Chapman in 1874, with the sum of $700.

In 1860 the sum of £200, presented to the College by H. R. H. the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.

In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson, of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physical Science.

In the same year the "Shakespeare Gold Medal," for an Honour Course, to comprise and include the works of Shakespeare and the Literature of England, from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint—was founded and endowed by citizens of Montreal, on occasion of the three hundredth anniversary of the birth of Shakespeare.

In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Logan, LL.D., F.R.S., F.G.S., &c.

In 1874 a Gold and Silver Medal were given by his Excellency the Earl of Dufferin, Governor General of Canada, for competition in the Faculty of Arts, and continued till 1878.

In 1875 the "Neil Stewart prize of $20 in Hebrew" was endowed by Neil Stewart, Esq., of Vankleek Hill, in the sum of $340.

In 1880 a Gold and Silver Medal were given by His Excellency the Marquis of Lorne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.

In 1883 a Gold, Silver and Bronze Medal were given by R. J. Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture" by Students in the Graduating Class and 2nd and 3rd years, who have attended the University Gymnasium.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science. Continued till 1888.

THE "CHARLES G. COSTER MEMORIAL PRIZE" for general proficiency—given by Colin H. Livingstone, Esq., B. A., founded in 1889.

7. SUBSCRIPTIONS TO GENERAL ENDOWMENT.

1856.

John Gordon McKenzie, Esq.	$2000	Charles Alexander, Esq	$600
Ira Gould, Esq	2000	Moses E. David, Esq.	600
John Frothingham, Esq	2000	Wm. Carter, Esq.	600
John Torrance, Esq.	2000	Thomas Patton, Esq.	600
James B Greenshields, Esq.	1200	Wm. Workman, Esq	600
William Busby Lambe, Esq.	1200	Hon. Sir A. T. Galt	600
Sir George Simpson, Knight	1000	Hon. Luther H. Holton	600
Henry Thomas, Esq.	1000	Henry Lyman, Esq	600
John Redpath, Esq.	1000	David Torrance, Esq.	600
James McDougall, Esq.	1000	Edwin Atwater, Esq.	600
James Torrance, Esq.	1000	Theodore Hart, Esq.	600
Hon. James Ferrier.	1000	William Forsyth Grant, Esq	600
Harrison Stephens, Esq.	1000	Robert Campbell, Esq.	600
Henry Chapman, Esq.	600	Alfred Savage, Esq	600
Honourable Peter McGill.	600	James Ferrier, jun., Esq.	600
John James Day, Esq.	600	William Stephen, Esq.	600
Thomas Brown Anderson, Esq.	600	N. S. Whitney, Esq	600
Peter Redpath, Esq	600	William Dow, Esq.	600
Thomas M. Taylor, Esq	600	William Watson, Esq.	600
Joseph McKay, Esq.	600	Edward Major, Esq	600
Donald Lorn McDougall, Esq.	600	Honourable Charles Dewey Day.	200
Hon. Sir John Rose	600	John R. Esdaile, Esq.	200

1871.

William Molson, Esq.	$5000	T. W. Ritchie, Esq.	$600
William C. McDonald, Esq	5000	Messrs. A. & W. Robertson.	600
Thomas Workman, Esq	5000	Messrs. Sinclair, Jack & Co	250
John Frothingham, Esq	5000	John Reddy, M.D.	100
J. H. R Molson, Esq	5000	Wm. Lunn, Esq	100
John McLennan, Esq	2000	Kenneth Campbell, Esq	100
B Gibb Esq	600	R. A. Ramsay, Esq	100
W. Notman, Esq	600	William Rose, Esq	50

1881-82.

Hugh McLennan, Esq	$5000	O. S. Wood, Esq	$1000
G. A. Drummond, Esq	4000	J. S. McLachlan, Esq	1000
George Hague, Esq	3000	J. B. Greenshields, Esq. (London)	1000
M. H. Gault, Esq	2000	Warden King, Esq	1000
Andrew Robertson, Esq	1000	W. B. Cumming, Esq	1000
Robertson Campbell, Esq	1000	Mrs. Hew Ramsay	500
Sir J. Hickson, and Lady Hickson	1000	R. A. Ramsay, Esq	500
Mrs. Andrew Dow	1000	H. H. Wood, Esq	500
Alexander Murray, Esq	1000	James Burnett, Esq	500
Miss Orkney	1000	Charles Gibb, Esq	500
Hector McKenzie, Esq	1000		

1883—84.

Edward Mackay, Esq $5000

8. SUBSCRIPTIONS FOR CURRENT EXPENSES, 1881-82.

Principal Dawson	$1000	Being	$1000
J. H. R. Molson, Esq	1000	Per annum, 5 years being	5000
George Stephen, Esq	1000	" "	5000
Hon. Donald A. Smith	1000	" "	5000
David Morrice, Esq	200	" "	1000
Messrs. Gault Brothers & Co	200	" "	1000
Messrs. A. S. & S. H. Ewing	200	" "	1000
Hon. Robert Mackay	300	Per annum, 2 years, being	600
Jonathan Hodgson, Esq	100	Per annum, 5 years, being	500
Geo. M. Kinghorn, Esq	100	" "	500
Thomas Craig, Esq	100	Per annum, 2 years, being	200
John Rankin, Esq	200	Being	200
John Duncan, Esq	200	"	200
Robert Benny, Esq	100	"	100
Miss E. A. Ramsay	100	"	100
Hugh Paton, Esq	50	For 2 years, being	100
George Brush, Esq	25	For 5 years, being	125
J. M. Douglas, Esq	50	Being	50
James Court, Esq	50	"	50
David J. Greenshields, Esq	300	"	300

1887-8.

John H. R. Molson, Esq	$1000	Per annum, 3 years, being	$3000
W. C. McDonald, Esq	1000	" " "	3000
Peter Redpath, Esq	1000	" " "	3000
Hon. Sir Donald A. Smith, K.C.M.G.	1000	" " "	3000
Hon. Jas. Ferrier	500	" " "	1500
Sir Joseph Hickson	500	" " "	1500
Hugh McLennan, Esq	250	" " "	750
E. B. Greenshields, Esq	250	" " "	750
George Hague, Esq	250	" " "	750
John Molson, Esq	250	" " "	750
Samuel Finley, Esq	250	" " "	750
Mrs. Mackay, 1888-89			$100
Do 1889-90			100

II. *Endowments and Subscriptions for the Faculty of Applied Science.*

1. BUILDINGS, CHAIRS, ETC.

The William Scott Chair of Civil Engineering, in 1884, endowed by the last will of the late Miss Barbara Scott, of Montreal,—$30,000.

The David J. Greenshields Chair of Chemistry and Mineralogy, in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal, with the sum of $40,000, half of which is devoted to Faculty of Applied Science.

The Thomas Workman Department of Mechanical Engineering—founded under the last will of the late Thomas Workman Esq., and endowed with the sum of $117,000. The sum of $60,000 for the maintenance of a Chair of Mechanical Engineering, with the assistance, shops, machinery and apparatus necessary thereto, $57,000 to be expended in the provision of necessary buildings, machinery and apparatus. Any balance of this to be added to the invested endowment for the maintenance of the said Department.

The William C. McDonald Technical Building—announced by the donor as a gift to the University in 1890, and now in process of erection.

2. EXHIBITIONS AND SCHOLARSHIPS.

The Scott Exhibition—founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of $1,100, subscribed by members of the Society, and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science —Annual value $66.

The Burland Scholarship— founded 1882, by J. H. Burland, B. A. Sc., $100 for a Scholarship in Applied Science, for three years, being $300.

3. MEDALS AND PRIZES.

In 1880 a Gold and Silver Medal were given by His Excellency the Marquis of Lorne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.

In 1883 a Gold, Silver and Bronze Medal were given by R. J Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture" by Students in the Graduating Class and 2nd and 3rd years, who have attended the University Gymnasium.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science. Continued till 1888.

In 1885 the British Association Gold Medal, for competition in the Graduating class in the Faculty of Applied Science, was founded by subscription of members of the British Association for the Advancement of Science, and by gift of the council of the Association, in commemoration of its meeting in Montreal in the year 1884.

In 1888 a Gold and a Silver Medal were given by His Excellency Lord Stanley, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

4. ENDOWMENTS AND SUBSCRIPTIONS FOR MAINTENANCE OF FACULTY OF APPLIED SCIENCE.

Endowment Fund.

Daniel Torrance, Esq.	$5000
George Moffatt, Esq.	1000
Charles J. Brydges, Esq.	1000

Annual Subscriptions, 1871-1879.

Hon. James Ferrier (per annum, for 10 years)	$100
Peter Redpath, Esq. (per annum, for 10 years)	400
John H. R. Molson, Esq. (per annum, for 10 years)	400
George H. Frothingham, Esq. (per annum, for 7 years)	4 00
T. James Claxton, Esq. (per annum, for 6 years)	100

Donald Ross, Esq. (per annum, for 5 years)	$ 50
Miss Mary Frothingham (per annum, for 3 years)	400
H. McLennan, Esq. (per annum, for 5 years)	100
A. F. Gault, Esq. (do do)	100
Gilbert Scott, Esq., for 2 years	100
Joseph Hickson, Esq., do	100
Principal Dawson, do	300
His Excellency the Marquis of Lorne	500
Mrs. Redpath (Terrace Bank)	100

To provide lectures in Mechanical and Sanitary Engineering.

E. B. Greenshields, Esq	$ 50
J. E. Bovey, Esq	50
Professor H. T. Bovey	61
Jeffrey H. Burland, B.A.Sc., $100 for 2 years	200
Smaller amounts	40

Chair of Practical Chemistry.

Hon. C. Dunkin, M.P.	$1200	P. Redpath, Esq.	$ 226
Principal Dawson	1200		

Class Rooms for Faculty of Applied Science, 1888.

John R. Molson, Esq	$3000
W. C. McDonald, Esq	3000

III. *Endowments and Subscriptions in aid of the Faculty of Medicine.*

1. LEANCHOIL ENDOWMENT.

Sir Donald A. Smith, K.C.M.G. $50,000

2. CAMPBELL MEMORIAL ENDOWMENT—$63,000.

Established to commemorate the services rendered to the Faculty during 40 years by the late Dean George W. Campbell, M.D., LL.D.

Mrs. G. W. Campbell	$2000	Mrs. John Redpath	$ 1000
H. A. Allan, Esq	1500	Hon. John Hamilton	1000
Sir D. A. Smith	1500	Miss Orkney	1000
Sir George Stephen, Bart	1000	Hugh McKay, Esq	1000
R. B. Angus, Esq	1000	Hector McKenzie, Esq	1000
George A. Drummond, Esq	1000	Thomas Workman, Esq	1000
Alex. Murray, Esq	1000	Hugh McLennan, Esq	1000
Robt. Mont, Esq	1000	O. S. Wood, Esq	1000
W. C. McDonald, Esq	1000	James Burnett, Esq	500
A Friend	1000	Andrew Robertson, Esq.	500
Duncan McIntyre, Esq	1000	Robt. McKay, Esq	500
Alex. Buntin, Esq	1000	John Hope, Esq	500
A. F. Gault, Esq	1000	Alex. Urquhart, Esq	500
M. H. Gault, Esq	1000	E. K. & G. A. Greene, Esqrs	500
G. W. Stephens, Esq	1000	R. A. Smith, Esq	500
James Benning, Esq	1000	Geo. Hague, Esq	500
R. P. Howard, M.D	1000	J. K. Ward, Esq	500
Frank Buller, M.D	1000	Warden King, Esq	500
G. B. & J. H. Burland, Esqrs	1000	John Sterling, Esq	500
Miss Elizabeth C. Benny	1000	John Rankin, Esq	500
J. C. Wilson, Esq	1000	Messrs. Cantlie, Ewan & Co.	500

Robt. Reford, Esq	$ 500
Messrs. J. & W. Ogilvie	500
Randolph Hersey, Esq	500
John A. Pillow, Esq	500
S. Carsley, Esq	500
D. C. MacCallum, M.D	500
Messrs. McLachlan Bros	500
Messrs. S. Greenshields, Son & Co.	500
Jonathan Hodgson, Esq	500
Duncan McEachran, Esq., F.R.C.V.S	500
Geo. Ross, M.D	500
T. G. Roddick, M.D	500
Wm. Gardner, M.D	500
G. P. Girdwood, M.D	500
G. E. Fenwick, M.D	500
Alex. Ramsay, Esq	500
Messrs. Cochrane, Cassils & Co.	500
Sir Joseph Hickson	500
Allan Gilmour, Esq. (Ottawa)	500
R. W. Shepherd, Esq	500
Miles Williams, Esq	300
Chas. F. Smithers, Esq	250
John Kerry, Esq	250
A. Baumgarten, Esq	250
R. W. Elmenhorst, Esq	250
W. F. Lewis, Esq	250
Geo. Armstrong, Esq	250
J. M. Douglas, Esq	250
Messrs. H. Lyman, Sons & Co.	250
William Osler, M.D	250
F. J. Shepherd, M.D	250
Benj. Dawson, Esq	200
R. Wolff, Esq	150
James Stuart, M.D	150
A. T. Paterson, Esq	100
H. W. Thornton, M.D. (New Richmond, Q)	100
M. E. David, Esq	100
C. B. Hanvey, M.D. (Yale, B.C.)	100
D. Cluness, M.D. (Nanaimo, B.C.)	100
W. Kinlock, Esq	100
Hua & Richardson	100
Mrs. Cuthbert (New Richmond, Q.)	100
J. M. Drake, M.D	100
Hugh Paton, Esq	100
R. T. Godfrey, M.D	$ 100
T. A. Roger, M.D	100
W. A. Dyer, Esq	100
Geo. Wood, M.D. (Faribault, Minn.)	100
A. A. Browne, M.D	100
George Wilkins, M.D	100
R. L. MacDonnell, M.D	100
Joseph Workman, M.D. (Toronto)	50
Hon. Sir A. T. Galt	50
Henry Lunam, B.A., M.D. (Campbellton, N.B)	50
R. J. B. Howard, M.D	25
T. J. Alloway, M.D	25
Louis T. Marceau, M.D. (Napierville, Q.)	25
Griffith Evans, M.D. (Vet. Dept. Army)	25
J. J. Farley, M.D. (Belleville)	25
Henry R. Gray, Esq	25
J. E. Brouse, M.D. (Prescott)	20
R. F. Rinfret (Quebec)	20
Robt. Howard, M.D. (St. Johns)	20
Drs. J. & D. J. McIntosh (Vankleek Hill)	20
J. H. McBean, M.D	15
J. C. Rattray, M.D. (Cobden, O.)	10
J. H. Howard, M.D. (Lachine)	10
J. W. Oliver, M.D. (Clifton, O.)	10
D. A. McDougall, M.D. (Ottawa, O.)	10
A. Pousette, M.D. (Sarnia, O.)	10
A. Ruttan, M.D. (Napanee, O.)	10
James Gunn, M.D. (Durham, O.)	10
J. McDiarmid, M.D. (Hensall, O.)	5
W. J. Derby, M.D. (Rockland, O.)	5
J. Gillies, M.D. (Teeswater, O.)	5
J. B. Benson, M.D. (Chatham, N.B.)	5
L. A. Fortier, M.D. (St. David, Q.)	5
J. A. McArthur, M.D. (Fort Elgin, O.)	5
John Campbell, M.D. (Seaforth, O.)	5

3. MEDALS AND SCHOLARSHIPS.

In 1865 the "Holmes Gold Medal" was founded by the Medical Faculty, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine, who should undergo a special examination in all the branches, whether Primary or Final.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband, Prof. William Sutherland, M.D., for

competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

THE DAVID MORRICE SCHOLARSHIP—in the subject of Institutes of Medicine, in the Faculty of Medicine—founded in 1881—value $100. (Terminated in 1883.)

4. LIBRARY, MUSEUM AND APPARATUS.

For the fittings of the Library and Museum of the Faculty of Medicine, 1872.

G. W. Campbell, A. M., M.D	$1200	Robert Craik, M.D	$200
W. E. Scott, M.D	200	Geo. E Fenwick, M.D	200
Wm. Wright, M.D	200	Joseph M. Drake, M.D	200
Robert P. Howard, M.D	200	George Ross, M.A., M.D	50
Duncan C. MacCallum, M.D	200		
The Professors and Lecturers in the Summer Sessions of the Faculty of Medicine		Donation to Apparatus, Museum, Library, etc., of the Medical Faculty, 1887, $1,182; 1888, $1,023.	2205

For Physiological Laboratory of Medical Faculty, 1879.

Dr. Campbell	$100	Dr. Ross	$50
Dr. Howard	100	Dr. Roddick	50
Dr. Craik	100	Dr. Buller	50
Dr. MacCallum	100	Dr Gardner	50
Dr. Drake	100	Dr. Osler	50
Dr. Godfrey	100		
Dr. McEachran, F.R.C.V.S	100		$ 950

Cameron Obstetrical Collections.

Dr. J. C. Cameron $10,000

IV. *Endowments and Subscriptions of the Faculty of Law.*

1. ENDOWED CHAIRS.

THE GALE CHAIR, in the Faculty of Law, endowed by the late Mrs. Andrew Stuart (*née* Agnes Logan Gale) of Montreal, in memory of her father, the late Honorable Mr. Justice Gale,—$25,000; part received, May, 1890.

THE WILLIAM C. MCDONALD Law Faculty Endowment, founded by William C. McDonald, Esq. (1890)—$150,000.

2. MEDAL.

In 1865 the "Elizabeth Torrance Gold Medal" was founded and endowed by John Torrance, Esq., of St. Antoine Hall, Montreal, in memory of the late Mrs. John Torrance, for the best student in the graduating class in Law, and more especially for the highest proficiency in Roman Law.

V. *Subscriptions and Donations for Special objects.*

1. FOR APPARATUS.

William Molson, Esq., Philosophical Apparatus, 1867	$ 500
John H. R. Molson, Esq., for the same	500
Peter Redpath, Esq., for the same	500
George Moffatt, Esq., for the same	250
Andrew Robertson, Esq., for the same	100
John Frothingham, Esq., for the same	100
David Torrance, Esq., for the same	100
	$ 2,000

A Telescope and Astronomical Instrument, the gift of Charles T. Blackman, Esq., of Montreal, and called after his name.

Thos. J. Barron, B.A., Philosophical Apparatus	$ 50
J. H. R. Molson, Esq., Dynamo, Gas Engine and Fixtures	1792
A Lady, for the purchase of Mining Models	1000
Thos. McDougall, Esq., for the same	25
J. Livesey, Esq., through Dr. Harrington, for the same	50
Geo. Stephen, Esq., for the same	50
Charles Gibb, B.A., donation for Apparatus in Applied Science	50
The Local Committee for the reception (1881) of American Society of Civil Engineers — For the purchase of appliances for the department of Civil Engineering in Faculty of Applied Science	475
Capt. Adams, Chemical Apparatus	10
J. H. Burland, B.A. Sc., Chemical Apparatus	25
Mrs. Redpath, Storage battery	400
W. C. McDonald, Esq., Apparatus for Chemical Laboratory	2075
The Local Committee of the British Association for the Advancement of Science, to found the British Association Apparatus Fund in the Faculties of Arts and Applied Science, in commemoration of the meeting of the Association in Montreal in 1884	1500

2. FOR LIBRARY AND MUSEUM.

John Thorburn, for purchase of Books	$ 90	Mrs. Redpath, for the endowment of the Wm. Wood Redpath Library Fund	$1000
Andrew Drummond, do for Applied Science	25	A Friend, by the Hon. F. W. Torrance	400
T. J. Claxton, Esq., for purchase of Specimens for Museum	250	Peter Redpath, Esq., for Museum Expenses, 1882, $1,000; '83, $1,000; '84, $1,000; '85, $1,000; '86, $1,000; '87, $1,000; '88, $1,000; '89, $1000	8000
Mrs. H. G. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan shells	233	The Graduates in Arts and Applied Science of 1885 for purchase of Books	31
A Lady for Museum Expenses, in 1883	1000	Do of 1886	28
A Lady for Museum Expenses, in 1883-4 and 1887	3000	The late R. A. Ramsay, Esq., Bequest for purchase of books	1000
A friend for the purchase of specimens for the Museum	1900	John H. R. Molson for purchase of book on "Butterflies of Eastern U.S. and Canada"	50
Wm. Molson, Esq., for Library Fund	4000	Andrew Drummond, Esq., to Library Fund of Faculty of Applied Science	25
Wm. Molson, Esq., for Museum Fund	2000		
Hon. F. W. Torrance, for Mental and Moral Philosophy Book Fund	1000		

3. FOR A BUILDING FOR THE CARPENTER COLLECTION OF SHELLS. 1868.

Peter Redpath, Esq	$500	Wm. Dow, Esq	$100
William Molson, Esq	500	Thos. Rimmer, Esq	100
Harrison Stephen, Esq	100	Andrew Robertson, Esq	100
Robert J. Reekie, Esq	100	Mrs. Redpath	100
John H. R. Molson, Esq	100	Benaiah Gibb, Esq	50
Sir Wm. E. Logan, Esq., F.R.S.	100	Honorable John Rose	50
John Molson, Esq	100		
Thos. Workman, Esq., M.P	100		$2,200
Geo. H. Frothingham, Esq	100		

4. FOR THE ERECTION OF THE LODGE AND GATES.

William Molson, Esq	$100	James A. Mathewson, Esq	$100
John H. R. Molson, Esq	100	Peter Redpath, Esq	100
William Workman, Esq	100	G. H. Frothingham, Esq	100
Joseph Tiffin, jr., Esq	100	G. D. Ferrier, Esq	100
Thos. J. Claxton, Esq	100	Geo. W. Warner, Esq	100
James Linton, Esq	100	John Smith, Esq	100
William McDougall, Esq	100	Charles Alexander, Esq	100
Charles J. Brydges, Esq	100	J. Evans, Esq	100
George A. Drummond, Esq	100	Henry Lyman, Esq	100
Thomas Rimmer, Esq	100		
William Dow, Esq	100		$2,100
John Frothingham, Esq	100		

5. FOR THE SUPPORT OF THE CHAIR OF BOTANY, 1883-84.

Principal Dawson	$500	Per annum, 5 years, being	$2500
Hon. Sir. D. A. Smith	250	" " "	1250
J. H. R. Molson, Esq	100	" " "	500
Mrs. J. H. R. Molson	100	" " "	500
G. Hague, Esq	100	" " "	500
Mrs. Redpath	100	" " "	500
Hugh McKay, Esq	100	" " "	500
Robert Moat, Esq	100	" " "	500
W. C. McDonald, Esq	100	" " "	500
Charles Gibb, Esq	50	" " "	250
Miss Orkney	50	" " "	250
Robert McKay, Esq	50	" " "	250
Mrs. Molson	50	" " "	250
Mrs. John Molson	50	" " "	250
John Stirling, Esq	50	" " "	250
Warden King, Esq	50	" " "	250
Miss Hall	50	" " "	250
Robert Angus, Esq	50	" " "	250
D. A. P. Watt, Esq	50	" " "	250
Hugh McLennan, Esq	25	" " "	125
Sir. Joseph Hickson	10	" " "	50
Mrs. Philips	10		10

6. IN AID OF THE CHAIR OF HEBREW, 1889.

Warden King, Esq	$50	Per annum, 3 years, being	$150
Principal Sir William Dawson	50	" " "	150
Hon. Hugh Mackay	50	" " "	150
A. F. Gault, Esq	25	" " "	75
Geo. Hague, Esq	25	" " "	75
T. A. Dawes, Esq	25	" " "	75
S. Carsley, Esq	25	" " "	75

7. FOR MUSICAL INSTRUCTION IN THE DONALDA SPECIAL COURSE FOR WOMEN.

Hon. Sir Donald A. Smith $200

8. FOUNDER'S TOMB.

R. A. Ramsay, M.A., B.C.L., to defray the expenses of re-erecting the tomb of the late Hon. James McGill $150

9. ENDOWMENT, HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Hannah Willard Lyman Memorial Fund," contributed by subscription of former pupils of Miss Lyman, and invested as a permanent endowment, to furnish annually a Scholarship or Prize in a "College for Women" affiliated to the University, or in classes for the Higher Education of Women approved by the University. The amount of the fund is at present $1,100.

10. SPECIAL COLLECTIONS OF BOOKS PRESENTED TO THE LIBRARY.

1. The Peter Redpath Collection of Historical Books, presented by Peter Redpath, Esq., of Montreal, 2368 Volumes.
2. The Robson Collection of works in Archæology and General Literature, presented by Dr. John Robson, of Warrington, England, 3436 Volumes.
3. The Charles Alexander Collection of Classical Works, presented by C. Alexander, Esq., of Montreal, 221 Volumes.
4. Frederick Griffin, Esq., Q.C., Collection of Books, being the whole of his Library, bequeathed by his will, 2695 Volumes.
5. The Hon. Mr. Justice MacKay, Collection of Books, being the whole of his Library, 2007 Volumes.
6. The "T. D. King Shakespeare Collection," presented by the Hon. Sir. Donald A. Smith and W. C. McDonald, Esq., of Montreal, being 214 Volumes.

11. SPECIAL COLLECTIONS PRESENTED TO THE MUSEUM.

1. The Holmes Herbarium, presented by the late Andrew F. Holmes, M.D.
2. The Carpenter Collections of Shells, presented by the late P. P. Carpenter, Ph. D.
3. The Collection of Casts of Ivory Carvings issued by the Arundel Society presented by Henry Chapman, Esq.
4. The McCulloch Collection of Birds and Mammals, collected by the late Dr. M. McCulloch, of Montreal, and presented by his heirs.
5. The Logan Memorial Collections of Specimens in Geology and Natural History, presented by the heirs of the late Sir W. E. Logan, LL.D., F.R.S.
6. The Dawson Collection in Geology and Palæontology, being the Private Collections of Principal Dawson, presented by him to the Museum.
7. The Portrait of Peter Redpath, Esq., painted by Mr. Sidney Hodges of London, and presented by Citizens of Montreal.
8. The Bowles Collection of Lepidoptera, presented by W. C. McDonald, Esq., and J. H. Burland, Esq.

(See also "List of Donations to the Library and Museum," printed annually in the Calendar and Report to the Museum.)

VI. *The Graduates' Fund.*

1. THE FUND FOR ENDOWMENT OF THE LIBRARY.

The Graduates' Society of the University, in 1876, passed the following Resolution :—

Resolved:—"That the members and graduates be invited to subscribe to a "fund for the endowment of the Libraries of the University ; said fund to be in- "vested and the proceeds applied under the supervision of the Council of the "Society in annual additions to the Libraries ; an equitable division of said pro- "ceeds to be made by the Council between the University Library and those of "The Professional Faculties."

In terms thereof the following subscriptions have been announced to date, May 1st, 1889. They are payable in one sum, or in instalments, as subscribers have elected.

Alphabetically arranged.

Baynes, O'Hara, B.C.L.	$ 50	Hall, J. S., jun., B.A., B.C.L	$ 50
Bethune, M.B., M.A., B.C.L.	50	Hall, Rev. W., M.A.	10
Blackader, Alex. D., B.A., M.D.	50	Harrington, B. J., B.A., Ph.D.	50
Burland, J. H., B.A.Sc.	120	Holton, Edward, B.C.L	100
Browne, A. A., B.A., M.D.	50	Hutchinson, M., B.C.L.	5
Cline, J. D., B.A., M.D	25	Keller, F. J., B.C.L	25
Cushing, Lemuel, LL.D., B.C.L.	25	Kelley, F. W., B.A., Ph.D.	100
Dougall, J. R. M.A.	50	Laing, Rev. R., M.A.	100
Ells, R. W., LL.D.	50	Lyman, F. S., B.A., B.C.L	50
Empson, Rev. J., M.A.	25	Lyman, H. H., M.A	100
Gardner, Wm., M.D.	100	Mackenzie, Fred., B.C.L	100
Gibb, Charles, B.A.	50	Maclaren, J. J., M.A., D.C.L.	100
Gilman, F.E., LL.D., B.C.L.	100	Macleod, C. H., Ma.E	50
Gould, C. H., B.A.	100	Macmaster, D., B.C.L.	100
Marler, Wm. DeM., B.A., B.C.L.	125	Robins, S. P., LL.D.	50
McCord, D. R, M.A., B.C.L.	100	Roddick, T. G., M.D.	100
McGregor, James, LL.D.	80	Ross, George M.A., M.D.	100
Molson, Wm., M.D.	100	Shepherd, J. F., M.D.	100
Osler, Wm., M.D.	100	Torrance, J. F., B.A., B.A. Sc.	100
Ramsay R. A., M.A., B.C.L.	100	Trenholme, N. W., M.A., D.C.L.	100
Rexford, Rev. E. I., B.A.	50		
Robertson, Alex., B.A.	100	Total to date	$3,090

2. THE DAWSON FELLOWSHIP FOUNDATION.

The Graduates' Society of the University, in 1880, and in commemoration of the completion by Dr. Dawson of his twenty-fifth year as Principal, resolved to raise, with the assistance of their friends, a Fund towards the Endowment of the Fellowship, under the above name.

Details of the scheme can be had from the Treasurer, C. H. McLeod, Esq, Ma.E. The following subscriptions have been announced to date, May 1st, 1889. They are payable in one sum, in instalments, without interest or with interest till payment of capital, as subscribers have elected.

Alphabetically arranged.

Abbott, H., B.C.L.	$ 60	Lyman, H. H., M.A.	$ 100
Archibald, H., B.A.Sc.	20	Lyman, A. C., M.A., B.C.L.	50
Bethune, M. B., M.A., B.C.L.	50	McCormick, D., B.C.L	100
Carter, C. B., B.C.L.	100	McGibbon, R. D., B.A., B.C.L.	100
Cruickshank, W. G., B.C.L.	100	McGoun, A., jun., M.A., B.C.L.	50
Dawson, W. B., M.A., Ma.E.	50	McLennan, J. S., B.A.	100
Dougall, J. R., M.A.	250	Ramsay, R. A., M.A., B.C.L.	50
Gibb, C., B.A.	100	Spencer, J. W., B.A Sc., Ph.D.	50
Hall, Rev. Wm., M.A.	100	Stephen, C. H., B.C.L.	100
Hall, J. S., jun., B.A., B.C.L.	100	Stewart, D. A., B.A.Sc.	20
Harrington, B. J., B.A., Ph.D.	50	Stewart, J., M.D.	60
Hutchinson, M., B.C.L.	400	Tait, M. M., B.C.L.	100
Kirby, J., LL.D., D.C.L.	50	Taylor, A. D., B.A., B.C.L.	100
Krans, Rev. E. H., M.A., LL.D.	100	Trenholme, N. W., M.A., D.C.L.	400
Leet, S. P., B.C.L.	100		
Lighthall, W. D., M.A., B.C.L.	100	Total to date	$3,010

APPENDIX.

Faculty of Law.

Principal : Sir William Dawson, LL.D. (Ex Officio).

N. W. Trenholme, Q.C., M.A., D.C.L., Dean, and Gale Professor of Roman and International Law.

Honorable Mr. Justice Wurtele, D.C.L., Professor of the Law of Real Estate.

J. S. Archibald, Q.C., D.C.L., Professor of Commercial Law.

L. H. Davidson, Q.C., M.A., D.C.L., Professor of Commercial Law.

Christophe A. Geoffrion, Q.C., B.C.L., Professor of Law of Contracts.

Archibald McGoun, M.A., B.C.L., Professor of Legal Bibliography.

Thomas Fortin, LL.L., Professor of Civil Procedure and Municipal Law.

W. DeM. Marler, B.A., B.C.L., Professor of Notarial Law.

C. J. Doherty, Q.C., B.C.L., Professor of Civil Law.

Harry Abbott, Q.C., B.C.L., Professor of Commercial Law.

Eugene Lafleur, B.A., B.C.L., Professor of Civil Law.

Dean of Faculty.—Professor Trenholme.

Secretary and Librarian of the Faculty.—Professor McGoun.

Corporation Examiners for Degrees.—Professors Trenholme and Fortin.

Matriculation Examiners of the Faculty.—Professors Archibald and Lafleur

The Faculty of Law feels much satisfaction in being able to announce that the important step, so long and earnestly desired by all friends of the University, of placing the McGill School of Law on such a substantial and permanent basis as to enable it efficiently to perform its part in the great work of legal education in Canada, has been recently accomplished by the munificent endowment presented to the University by Mr. William C. McDonald. This endowment places the Faculty in a position to offer to those who desire to study the law, either with a view to its practice as a profession or as a means of culture, or as a qualification for the discharge of the higher duties of citizenship, a comprehensive and complete course of legal study, with the use of library, reading room and other aids which have not heretofore been at the command of the Faculty The course of study to be pursued, extending over a period of three

years, and the instruction to be imparted, while designed thoroughly to qualify professional students for the practice of their profession, will also fully recognize the important fact, which, no doubt, was a main inducement for the action of the Faculty's generous benefactor, that upon the character of the Bar depends that of the Bench and of the administration of justice, and to a great extent also the character of the public men and public life of the country; that, in fact, from the ranks of no other profession, are so many called to fill high positions of trust and to perform duties, the efficient and upright discharge of which is of vital importance to the community.

In reorganizing the Faculty, under the W. C. McDonald endowment, a number of well-known names have been added to the staff, as shown above, and the courses largely specialized. It was felt, that while professional men, engaged in the active practice of their profession, might be relied upon to deliver regularly a limited number of lectures on special subjects, they could not be expected to undertake to submit to the serious interference with their business and inevitable interruptions, involved in very lengthy courses. And to obviate the difficulties and drawbacks necessarily arising from sole dependence, as heretofore, on professional men in active practice, for attending to the interests and maintaining the efficiency of the Faculty, and to meet a deeply-felt want in this respect, the Dean has been appointed as a salaried officer, whose duty it will be primarily to devote his whole time to the work.

Further, the Professor of Legal Bibliography has been appointed secretary and librarian, and will have supervision of the Library,—comprising at present the law libraries of the late Mr. Griffin, Q.C., of the late Chancellor Day, and of part of the library of the late Mr. Justice McKay, all of which were bequeathed to the University; and also of the law library of the late Mr. Justice Torrance, now the property of the Fraser Institute, of which he was a trustee—the use of which has been generously granted to the Faculty by the present trustees. The above law books will of themselves afford to the law student a library which will generally prove sufficient for his wants, and which will be kept up and added to by the expenditure of a sum annually in the purchase of books. There will also be provided in connection therewith a reading room, in which the leading law magazines and literature of the day will be found.

As a place for the study of Law by professional students, Montreal affords undoubted advantages, among other reasons, on account of the great variety and extent of the legal business done there, the constant sitting of all the principal courts of the Province, and the large number of first-class law offices open to students; while for all students, and especially for students of historic and philosophic jurisprudence, no more interesting or attractive legal system exists than that prevailing in this Province, where may be daily seen and studied, not simply theoretically, but in active operation as parts of our law, the three famous systems of jurisprudence,—Roman, French and English, with additions and modifications introduced by our own legislatures and courts. The imposing features of the Roman Law may be recognized throughout the greater portion of our Civil Code, often combined with or incorporated into that noble system elaborated and perfected by Pothier and other great French jurists, both of the ancient and modern epochs, which is the direct source of most of our civil law; while nearly the whole body of English Criminal and Constitutional law and large portions of English Commercial law are equally parts of the law of this Province.

The importance of the Notarial profession, and of a knowledge of notarial practice and conveyancing, has led to the appointment as a full member of the faculty of a Professor of Notarial law, whose course of lectures will be attended by all professional students.

With a view to extending as far as possible the usefulness of the Faculty, the courses of lectures on commercial subjects have been so arranged, that young men engaged in banks or other business houses can attend them without interference with their regular duties. Students of other departments of the University, and, in fact, all who may desire to do so, may attend such particular courses as they may see fit to select. It is hoped that the courses delivered will be found beneficial to all students, indeed to all who may desire to know something of the constitution and laws by which they are governed, and of a science which has been characterized by Burke, as "the collected reason of ages, combining the principles of original justice and the infinite variety of human concerns."

The classes in Law will begin with an opening lecture in the Hall of the Fraser Institute, on Wednesday, the first of October, 1890.

The Supplemental and Matriculation Examinations will be held in the Faculty Rooms, Fraser Institute, on Wednesday, 24th September, at 4 p.m.

While the Faculty accept for matriculation the requirements stated in the Regulations below. they nevertheless strongly recommend students intending to study law to take the B.A. course in the Faculty of Arts as a preliminary qualification; and if that be not attainable, as much as possible of the Arts course.

The lectures will be delivered in the Faculty Rooms in two terms ; the first beginning on Thursday, 2nd October, 1890, and the second beginning on Monday, 5th January, 1891.

The Examinations will be held in the William Molson Hall, McGill College building, at Christmas, and at the close of the session.

The complete course of study in this Faculty extends over three years.

Two scholarships, each of one hundred dollars, are offered for competition among students whose domicile is not in Montreal or vicinity. They will be awarded, after the Sessional Examinations in April, 1891, upon the results of the Examinations of the first year, and will be payable during the second year.

Prizes open to competition of all the students, will also be given to the students taking the best standing in each year.

No scholarship or prize shall, however, be awarded to any student unless a sufficiently high standing, in the estimation of the Faculty, be attained, to merit it.

Matriculated students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation for attendance on any particular series of Lectures.

Students who have completed their course of three years, and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY FOR 1890-91.

Roman Law:

1st Year.
History of Roman Law
Maine, Ancient Law, cap. I. to IV
Institutes of Justinian, Bk. I
Gaius, Commentaries, I
2nd and 3rd Years.
Institutes of Justinian, Bk. II. et seq
Gaius, Commentaries, III. et seq
Maine, Ancient Law, cap. IV. et seq
— The DEAN.

Criminal Law
International Law
— The DEAN.

Law of Real Estate:

History and nature of various kinds of tenure of real property in the Province, and their incidents — Professor WURTELE.

Commercial Law:

Law of Sales, including Commercial Sales — Professor ARCHIBALD.

Commercial Law:

Law of Agency
Law of Partnership
— Professor DAVIDSON.

Law of Contracts — Professor GEOFFRION.

Legal Bibliography and History:

Sources of our Law: Customary Law of France, Royal Edicts and Ordinances, with jurisprudence of Parliament of Paris; Imperial Statutes and English laws in force here; Legislation within the Province — Professor MCGOUN.

Civil Procedure:

Jurisdiction of the civil courts
General Rules of Pleading
Code of Procedure
— Professor FORTIN.

Notarial Law:

Notarial Practice and Conveyancing — Professor MARLER.

Civil Law:

Law of Successions
Forced licitations
— Professor DOHERTY.

Commercial Law:

Law of Banking
Documents of Title
Railway Law
— Professor ABBOTT.

Civil Law:

Law of persons and domestic relations
Civil Code, from art. 18
— Professor LAFLEUR.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student may apply to the Secretary, Prof. McGoun, 181 St James St., for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course.

2. The degree of B.A. obtained from any Canadian or other British University; or a certificate of having passed the examination before the Bar for admission to study Law in the Province of Quebec; or the Intermediate Examination in the Faculty of Arts in McGill University, shall be accepted in lieu of Examination for Matriculation in this Faculty. For other candidates the Matriculation Examination this year will be in the following subjects:—

Latin.—Virgil, Æneid, Book I.; Cicero, Orations I. and II. against Catiline. Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires;" *Molière, "Le Bourgeois Gentilhomme;" †Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in Composition and Grammatical Analysis, in English and French.

Mathematics.—Arithmetic; Algebra to the end of simple equations; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual); *Green's Short History of the English People; Miles' School History of Canada; †Duruy, Histoire de France.

Literature.—*Collier's Biographical History of English Literature; †Laharpe, Cours de Littérature; †Lefranc, Cours de Littérature.

Rhetoric.—Whately's Rhetoric; Blair's Lectures (small edition).

Philosophy.—*Whately's Logic; †Logique de Port Royal; †Cousin, Histoire de la Philosophie; *Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English Students only. Those preceded by a cross are for French Students only. The remainder are for both English and French.

3. Students in Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

4. The Register of Matriculation shall be closed on the 1st November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a

special examination to be determined by the Faculty ; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket or tickets for the class or classes they desire to attend.

6. Students who have attended Collegiate courses of legal study in other Universities, for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct:—

(1) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted, and the said class-book shall be submitted to the Faculty at each monthly meeting ; and the Faculty shall, after examination of such class-book, decide which students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to and from it, Students are expected to conduct themselves in the same orderly manner as in the Classrooms. Any Professor observing improper conduct in the Class rooms, or elsewhere in the building, will admonish the student and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the end of April following.

The Lectures will be delivered between the hours of half-past eight and half-past nine in the morning and four and half-past six in the afternoon; and special lectures in the evening; the whole at such hours and in such order as shall be determined by the Faculty. Professors shall have the right to substitute an examination for any such lecture.

9. At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors, and of such other examiners as may be appointed by the Corporation; which examination shall be conducted by means of printed questions, answered by the students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty.

After the examinations at the close of the second term, the Faculty shall decide the general standing of the students, taking into consideration the examinations of both terms, both of which examinations shall be considered the Sessional or Final Examinations for the college year, as the case may be.

10. No Student shall be considered as having kept a Session unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall in consequence be made between the Examinations of such students and those of the Students regularly attending Lectures. No student shall pass the degree of B.C.L. unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall, on or before the first day of March, forward such Thesis to the Secretary of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student who, being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the medal, which examination shall include the subject of Roman Law.

14. Every Candidate, before receiving the Degree of B.C.L., shall make the following declaration:—

Ego A. B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees in the Faculty are as follows:—

Registration Fee	$ 5 00
Sessional Fee by Ordinary Students	36 00
Sessional Fee by Occasional or Partial Students, for each course	5 00
Graduation Fee, including registration as voter in election of fellows	12 50

Matriculation and Sessional Fees must be paid on or before Nov. 1st; and if not so paid, the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pa any Matriculation Fee.

16. Occasional or Partial students may be admitted into said class on such terms as shall be arranged by the Faculty.

17. Every Candidate for the Degree of D.C.L. in course, under Chap. VIII. Section 4, of the Statutes of the University, must be a Bachelor of Civil Law of twelve years' standing, and shall be required to pass, within four years from his graduation as B.C.L., such examination as shall be prescribed by the regulations of the Faculty of Law, unless he shall have graduated as a B.A. of this University, either in Course or *ad eundem*. And not less than two months before proceeding to the Degree of D.C.L., the Candidate shall deliver to the Faculty of Law twenty-five printed copies of a Thesis or Treatise upon a subject selected or approved by the Faculty; such Thesis to contain not less than twenty-five octavo pages of printed matter, and possessing such degree of literary and scientific merit as shall, in the opinion of the Faculty, justify them in recommending him for that Degree. And in addition to the foregoing qualifications, the Candidate shall pay to the Secretary of the Faculty annually during term, for the retention of his name on the Books of the Faculty, during the said period of twelve years, a fee of two dollars, to be added to the Library Fund of the Faculty.

Except as regards the Thesis, this regulation applies only to those who have taken the Degree of B.C.L. subsequently to October, 1873. The examination under the above rule is as follows:—

(1) *International Law:*—

Phillimore: Wharton, Conflict of Law; Fœlix, Droit International Privé.

(2) *Roman Law:*—

Gaii Commentarii, IV.; Pauli Sententiæ; Pomponii Fragmentum de origine juris, D. 1, 2; Novellæ Justiniani, cxxvii., cxxviii.; Ortolan, Instituts de Justinien, Vol. i.; Mommsen's History of Rome.

(3) *Constitutional Law:*—

Hallam, Constitutional History of England; May, Constitutional Histories of England; Mill, Representative Government; The British North America Act, and cases thereunder.

SYLLABUS.

Monday, 15th September, 1890. Meeting of Faculty of Law, 8 p.m. Faculty Rooms.

Wednesday, 24th September. Supplemental and Matriculation Examinations, 4 to 6 p.m.

Saturday 27th September, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.

Wednesday, 1st October, 1890. Opening lecture, 8 p.m.

Thursday, 2nd October. Ordinary Lectures, First Term, begin.

Monday, 13th October, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.

Monday, 10th November, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.

Monday, 8th December, 8.pm. Meeting of Faculty of Law, Faculty Rooms.

Monday, 15th December. Last day for notice to be sent to Secretary of Section of the Bar by candidates at the January Examination for admission to study or to practice Law in the Province of Quebec.

Monday, 22nd December, 8 p. m. Meeting of Faculty of Law, Faculty Rooms.

Christmas Examinations as follows:—

1890.

Friday,	12 Dec.,	4 to 6 p.m.	Prof. WURTELE,	Real Estate Law.
Saturday,	13 "	3 to 5 "	" McGOUN,	Legal Bibliography and History.
Monday,	15 "	4 to 6 "	" DAVIDSON,	Commercial Law.
Tuesday,	16 "	" "	" ARCHIBALD,	Commercial Law: Sales.
Thursday,	18 "	" "	" TRENHOLME,	Roman Law.

Friday, 19 Dec., 4 to 6 p.m. Prof. LAFLEUR, Law of Persons.
Saturday, 20 " 3 to 5 " " MARLER, Notarial Law.
Monday, 6th January, 1891. Lectures, Second Term, begin.
" 12th " 1891, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.
Wed'day, 14th " 1891. Bar Examinations take place at Montreal.
Monday, 9th February, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.
" 2nd March. Theses for degree of B.C.L.
" 9th " 8 p.m. Meeting of Faculty of Law, Faculty Rooms.
" 13th April, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.

Sessional Examinations as follows :—

Thursday, 9th April, 1891, 4 to 6 p.m. Prof. TRENHOLME, Criminal Law.
Friday, 10th " " " FORTIN, Civil Procedure.
Saturday, 11th " 3 to 5 " " GEOFFRION, Contracts.
Thursday, 16th " 4 to 6 " " TRENHOLME, International Law.
Friday, 17th " " " " DOHERTY, Civil Law.
Saturday, 18th " 3 to 5 " " ABBOTT, Commercial Law.
Monday, 20th April, 8 p.m. Meeting of Faculty of Law, Faculty Rooms.
Saturday, 25th " Declaration of Results of Examination.
Wed'day, 29th " Convocation for Degrees in Law.
Monday, 1st June. Last day for notice to be sent to Secretary of Section of the Bar by candidates at the July Examination for admission to study or to practice Law in the Province of Quebec.
Monday, 8th June. Meeting of Faculty of Law.
July, 1891. Bar Examinations take place at Sherbrooke.

FACULTY OF LAW—TIME TABLE, 1890-91.

FIRST HALF-TERM, BEGINNING THURSDAY, 2ND OCTOBER, 1890.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8.30 to 9.30 a.m.	Prof. Archibald.	Prof. McGoun.	Prof. Archibald.	Prof. McGoun.	Prof. Archibald.
4 to 5 p.m.	The DEAN, Roman Law, 1st Year.	The DEAN, Roman Law, 1st Year.	The DEAN, Roman Law, 1st Year.	The DEAN, Roman Law, 1st Year.	The DEAN, Roman Law, 1st Year.
5 to 6 p.m.	Prof. Lafleur.	Prof. Davidson.	Prof. Lafleur.	Prof. Davidson.	Prof. Lafleur.
8 to 9 p.m.		Prof. Wurtele.		Prof. Wurtele.	

SECOND HALF-TERM BEGINNING THURSDAY, 6TH NOVEMBER, 1890.

8.30 to 9.30 a.m.	Prof. McGoun.	Prof. Archibald.	Prof. McGoun.	Prof. Archibald.	Prof. McGoun.
4 to 5 p.m.	The DEAN, Roman Law, 2d and 3d Years.	The DEAN, Roman Law, 2d and 3d Years.	The DEAN, Roman Law, 2d and 3d Years.	The DEAN, Roman Law, 2d and 3d Years.	The DEAN, Roman Law, 2d and 3d Years.
5 to 6 p.m.	Prof. Davidson.	Prof. Lafleur.	Prof. Davidson.	Prof. Lafleur.	Prof. Davidson.
to 9 p.m.		Prof. Marler.		Prof. Maher.	

THIRD HALF-TERM, BEGINNING MONDAY, 5TH JANUARY, 1891.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8.30 to 9.30 a.m.		Prof. Doherty.		Prof. Doherty.	
4 to 5 p.m.	Prof. Fortin.	The DEAN, Criminal Law.	Prof. Fortin.	The DEAN, Criminal Law.	Prof. Fortin.
5 to 6 p.m.	The DEAN, Criminal Law.	Prof. Abbott.	The DEAN, Criminal Law.	Prof. Abbott.	The DEAN, Criminal Law.
8 to 9 p.m.		Prof. Geoffrion.		Prof. Geoffrion.	

FOURTH HALF-TERM, BEGINNING THURSDAY, 19TH FEBRUARY, 1891.

8. 30 to 9.30 a.m.	Prof. Doherty.		Prof. Doherty.		Prof. Doherty.
4 to 5 p.m.	The DEAN, International Law.	Prof. Fortin.	The DEAN, International Law.	Prof. Fortin.	The DEAN, International Law.
5 to 6 p.m.	Prof. Abbott.	The DEAN, International Law.	Prof. Abbott.	The DEAN, International Law.	Prof. Abbott.
8 to 9 p.m.					

ADDENDA

OF

Faculties of Arts and Applied Science.

The appointment of Professor John Cox, M.A., to the W. C. McDonald Chair of Experimental Physics in the Faculty of Arts, and that of Prof. C. A. Carus-Wilson, B.A., to the Thomas Workman Chair of Mechanical Engineering in the Faculty of Applied Science, were not made in time to allow of the necessary changes in the previous pages of the Calendar, but these changes will be announced at the beginning of the session.

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.

SESSION OF 1889-90.

Montreal:

PRINTED BY JOHN LOVELL & SON,
ST. NICHOLAS STREET.
1890.

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McGILL UNIVERSITY,

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ENTRANCE EXAMINATIONS,

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FACULTY OF ARTS.

MATRICULATION, SCHOLARSHIPS AND EXHIBITIONS, 1889.

MATRICULATION EXAMINATION.

GREEK.

MONDAY, SEPT. 16TH:—MORNING, 9 TO 12.

Examiner,.....A. J. EATON, M.A., PH.D

NOTE.—Candidates for entrance into the First Year will take (A) and (C) 1—6. Candidates for Senior Matriculation will take (A), (B) and (C).

(A) Translate:—

Οἱ δὲ ποιήσαντες ἐκκλησίαν ἀπήγγελλον ταῦτα· οἱ δὲ στρατιῶται ἐχαλέπαινον τοῖς στρατηγοῖς, καὶ ἔφασαν αὐτοὺς πάλαι ταῦτ' εἰδότας κρύπτειν, καὶ οὐκ ἔφασαν ἰέναι, ἐὰν μή τις αὐτοῖς χρήματα διδῷ, ὥςπερ καὶ τοῖς πρωτέροις μετὰ Κύρου ἀναβᾶσι παρὰ τὸν πατέρα τοῦ Κύρου, καὶ ταῦτα οὐκ ἐπὶ μάχην ἰόντων, ἀλλὰ καλοῦντος τοῦ πατρὸς Κῦρον. Ταῦτα οἱ στρατηγοὶ Κύρῳ ἀπήγγελλον· ὁ δ' ὑπέσχετο ἀνδρὶ ἑκάστῳ δώσειν πέντε ἀργυρίου μνᾶς, ἐπὰν εἰς Βαβυλῶνα ἥκωσι, καὶ τὸν μισθὸν ἐντελῆ, μέχρι ἂν καταστήσῃ τοὺς Ἕλληνας εἰς Ἰωνίαν πάλιν. τὸ μὲν δὴ πολὺ τοῦ Ἑλληνικοῦ οὕτως ἐπείσθη.

ANABASIS, I. IV., 12-13.

(*a*) Explain the following grammatical constructions:—*στρατηγούς ἀναβᾶσι, ἰόντων,* Ἑλληνικοῦ, the subjunctives *ἥκωσι, καταστήσῃ.*

(*b*) Give English derivatives from *ἐκκλησία, στρατηγούς, πάλαι, κρύπτειν.*

(*c*) What would be the approximate value of *πέντε ἀργυρίου μνᾶς*?

(B) Translate:—

Ἀνδρομάχη δέ οἱ ἀγχι παρίστατο δακρυχέουσα,
ἐν τ' ἄρα οἱ φῦ χερὶ ἔπος τ' ἔφατ' ἔκ τ' ὀνόμαζεν
"Δαιμόνιε, φθίσει σε τὸ σὸν μένος οὐδ' ἐλεαίρεις
παῖδά τε νηπίαχον καὶ ἐυ' ἀμμορον, ἢ τάχα χήρη

σεῦ ἕσομαι. τάχα γάρ σε κατακτανέουσιν Ἀχαιοί,
πάντες ἐφορμηθέντες· ἐμοὶ δέ κε κέρδιον εἴη
σεῦ ἀφαμαρτούσῃ χθόνα δύμεναι. οὐ γὰρ ἔτ' ἄλλῃ
ἔσται θαλπωρὴ, ἐπεὶ ἂν σύγε πότμον ἐπίσπῃς,
ἀλλ' ἄχε'· οὐδέ μοί ἐστι πατὴρ καὶ πότνια μήτηρ.
ἦτοι γὰρ πατέρ' ἀμὸν ἀπέκτανε δῖος Ἀχιλλεὺς,
ἐκ δὲ πόλιν πέρσεν Κιλίκων εὐναιετόωσαν,
Θήβην ὑψίπυλον. κατὰ θ' ἔκτανεν Ἠετίωνα,
οὐδέ μιν ἐξενάριξε, σεβάσσατο γὰρ τόγε θυμῷ,
ἀλλ' ἄρα μιν κατέκηε σὺν ἐντεσι δαιδαλέοισιν
ἠδ' ἐπὶ σῆμ' ἔχεεν. περὶ δὲ πτελέας ἐφύτευσαν
νύμφαι ὀρεστιάδες, κοῦραι Διὸς αἰγιόχοιο.
οἱ δέ μοι ἑπτὰ κασίγνητοι ἔσαν ἐν μεγάροισιν,
οἱ μὲν πάντες ἰῷ κίον ἤματι Ἄϊδος εἴσω·
πάντας γὰρ κατέπεφνε ποδάρκης δῖος Ἀχιλλεὺς,
βουσὶν ἐπ' εἰλιπόδεσσι καὶ ἀργεννῇς ὀίεσσιν.

ILIAD, VI, 405-424.

(*a*) Account for the case of *οἱ* (vv. 405 and 406), *χειρί*, *σεῦ*, *χθόνα*, *Ἄϊδος*.

(*b*) Give mood, tense, verbal-stem and principal parts of the verbs *ἕσομαι*, *ἀπέκτανε*, *κατέκηε*, *ἔχεεν*, *ἅλτο*, *πῆξε*.

(*c*) Scan, marking the position of the Caesura, lines 405, 408 and 412.

(*d*) Note the leading peculiarities of Homeric dialect and style.

(C) GREEK GRAMMAR.

(*Greek words must be written with accents.*)

1. Decline Ἀτρείδης, *λέων*, *δόξα* in the singular; and *τριήρης* and *γένος* in the plural. Decline *τιθείς* throughout.

2. Decline *ἀληθής*, *μέγας*, *εἷς*, *ὅστις*.

3. Give the comparative and superlative of the adjectives *σοφός*, *ἡδύς*, *πολύς*. Form and compare adverbs from the same words.

4. Name the *primary* and *secondary* tenses. Explain the terms *simple stem*, *tense stem*, *vowel stem*. How many tense stems are distinguished in the Greek verb?

5. Give the *principal parts* of *λύω*, *λείπω*, *στέλλω*. Inflect the present indicative middle of *πράσσω* and *νικάω*. Give all the active infinitives of *φαίνω*.

6. Show where these words are made, and from what present indicatives: ἔφασαν, ἦσαν, ἄπιμεν, ἔδοσαν, λέλυσαι, ἔπαθεν.

7. How are *patronymics* formed, and what do they denote? How are *compound words* formed? Explain the following examples, giving their meanings: ἰχθυο-φάγος, χορ-ηγός, ἀρχ-ι-τέκ-των, στρατ-ηγός.

8. Translate, and explain the following constructions: (*a*) τὸ πλῆθος ἐψηφίσαντο πολεμεῖν. (*b*) σοροὶ ἐγὼ καὶ σὺ ἥμεν. (*c*) καλὸν ἡ ἀλήθεια. (*d*) τοῦ δὲ κλύε φοῖβος Ἀπόλλων. (*e*) ἀνέβη μέγαν οὐρανὸν Ὄλυμπον.

9. How would you classify conditional sentences in Greek? Give an example of each form.

10. Give the metrical feet of two syllables, showing the quantity of the syllables in each.

LATIN.

MONDAY, SEPT. 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....A. J. EATON, M. A., PH. D.

NOTE.—Candidates for entrance into the First Year will do either I. or II., and the first six questions of IV. Candidates for entrance into the Second Year will do III. and IV., and either I. or II.

I. Post eius mortem nihilo minus Helvetii id, quod constituerant facere conantur, ut e finibus suis *exeant*. Ubi iam se ad eam rem paratos esse arbitrati sunt, *oppida* sua omnia *numero* ad duodecim, vicos ad quadringentos, reliqua privata aedificia incendunt: frumentum omne, praeterquam quod secum portaturi erant, comburunt, ut, *domum* reditionis spe sublata, paratiores ad omnia pericula subeunda essent; trium *mensium* molita cibaria sibi quemque *domo* efferre iubent. Persuadent *Rauricis* et Tulingis et Latovicis, uti, eodem usi consilio, oppidis suis vicisque exustis, una cum iis proficiscantur; Boiosque, qui trans Rhenum incoluerant et in agrum Noricum transierant Noreiamque oppugnarant, receptos ad se socios sibi adsciscunt.—CAESAR, B. G., I. 5.

Cognito Caesaris adventu Ariovistus legatos ad eum mittit: quod antea de colloquio postulasset, id per se fieri licere, quoniam propius *accessisset* seque id sine periculo facere posse existimare. Non respuit condicionem Caesar iamque eum ad sanitatem reverti arbitrabatur, cum id, quod antea petenti denegasset, ultro *polliceretur*, magnamque in spem veniebat, pro suis tantis populique Romani in eum beneficiis cognitis suis postulatis fore, uti pertinacia *desisteret*. Dies colloquio dictus est ex eo die quintus.—CAESAR, B. G., I. 42.

(*a*) Carefully explain the construction of italicised words in the above extracts. (*b*) Give the principal parts of *conantur, incendunt, comburunt, sublata, adsciscunt.* (*c*) Explain the forms *oppugnarant, denegasset.*

II. Defessi Aeneadae, quae proxima litora, cursu
contendunt petere, et Libyae vertuntur ad oras.
Est in secessu longo locus; insula portum
efficit obiectu laterum, quibus omnis ab alto
frangitur inque sinus scindit sese unda reductos.
Hinc atque hinc vastae rupes geminique minantur
in coelum scopuli, quorum sub vertice late
aequora tuta silent; tum silvis scena coruscis
desuper horrentique atrum nemus imminet umbra.
Fronte sub adversa scopulis pendentibus antrum;
intus aquae dulces, vivoque sedilia saxo,
nympharum domus. Hic fessas non vincula naves
ulla tenent; unco non alligat ancora morsu.
Huc septem Aeneas collectis navibus omni
ex numero subit; ac magno telluris amore
egressi optata potiuntur Troes harena,
et sale tabentis artus in litore ponunt.—VIRGIL, Bk. I., 157-173.

(*a*) Write out, dividing into feet and marking the quantity of every syllable, and the principal caesura of each verse, the first four lines. (*b*) Give the principal parts of *frangitur, scindit, minantur, tenent, collectis.* (*c*) Account for the following ablatives: *cursu, obiectu, silvis, saxo, morsu, navibus, sale.*

III. Magna dis immortalibus habenda est atque huic ipsi Iovi Statori, antiquissimo custodi huius urbis, gratia, quod hanc tam taetram, tam horribilem tamque infestum rei publicae pestem totiens iam effugimus. Non est saepius in uno homine summa salus periclitanda rei publicae Quam diu mihi consuli designato, Catilina, insidiatus es, non publico me praesidio, sed privata diligentia defendi. Quum proximis comitiis consularibus me consulem in campo et competitores tuos interficere voluisti, compressi conatus tuos nefarios amicorum praesidio et copiis, nullo tumultu publice concitato: denique, quotienscumque me petisti, per me tibi obstiti, quamquam videbam perniciem meam cum magna calamitate rei publicae esse coniunctam.—Cic. In Catil. I. 5

Est etiam nobis is animus, Quirites, ut non modo nullius audaciae cedamus, sed etiam omnis improbos ultro semper lacessamus. Quod si omnis impetus domesticorum hostium, depulsus a vobis, se in me unum convertit, vobis erit videndum, Quirites, qua condicione posthac eos esse velitis, qui se pro salute vestra obtulerint invidiae periculisque omnibus: mihi quidem ipsi, quid est quod iam ad vitae fructum possit adquiri, cum praesertim neque in honore vestro, neque in gloria virtutis, quicquam videam altius, quo mihi libeat ascendere?—Cic. In Catil. III. 12.

(*a*) State fully the principles of syntax that explain the following forms: *dis, comitiis, tumultu, videbam, cedamus, condicione, velitis, libeat.* (*b*) Write short explanatory notes on the following: *Iovi Statori, consuli designato; Quirites; in honore vestro; tribunos aerarios.*

IV. LATIN GRAMMAR AND PROSE COMPOSITION.

1. Decline *fīlia, magister, prīnceps, diēs, ego, hīc* (marking by the usual sign, all long vowels.)

2. Write down the *cardinal numbers* in Latin from one to twenty.

3. How are the five declensions and four conjugations distinguished? Enumerate the *verbal nouns*. Define the terms *transitive, intransitive*, and *deponent*, as applied to verbs.

4. Inflect *sum* and *rego* in the future indicative active; *audio* and *nolo* in the present subjunctive active.

5. Give the principal parts of *ago, dico, cano, eo, findo, sto.*

6. What is a *predicate adjective?* Give the rules of agreement for predicate adjectives.

7. Explain the following grammatical constructions: (*a*) Caesaris *omni* et *gratia* et opibus fruor; (*b*) Iuba cum Labieno *capti*. (*c*) natura *inimica* sunt libera civitas et rex. (*d*) honos *consulatus*. (*e*) certiorem me *consilii* fecit. (*f*) medio *oppido* fluit. (*g*) cupio esse *clemens*. (*h*) nisi tu *amisisses* numquam *recepissem*.

8. What are *Final* and *Consecutive* clauses? By what particles are they introduced? Give two examples of such clauses.

9. Note the changes of construction, person and time, involved in converting Direct Discourse into Indirect Discourse.

10. Translate into Latin:

(1) The Helvetians will none the less go forth from their territories. (2) Are you ready for this undertaking? (3) I stayed there three days, I returned home on the fourth day. (4) Are you ready to show yourselves men of courage, such as the country looks for in such a crisis as this? you answer "yes," or are you ceasing to wish to be called Roman soldiers? "No" you all reply. (5) Some one has warned me not to forget how much you once injured me in my boyhood: whether you did so or not matters little; what is of importance to me is whether you are ready to be my friend now.

ENGLISH GRAMMAR.

WEDNESDAY, SEPTEMBER 18TH:—MORNING, 9 TO 10.30 AND 9 TO 12.

Examiners,..... { CHAS. E. MOYSE, B.A.
P. T. LAFLEUR, M.A.

(N.B. All candidates will be responsible for the first six questions. The remaining questions, from 7 to 9 inclusive, belong to the Higher Matriculation and Exhibition Examinations).

1. Define and illustrate:—Personal Pronoun, Relative Pronoun, Tense, Case, Intransitive Verb.

2. State clearly the difference between *Phrase* and *Clause* in analysis and shew by means of two examples that the same meanings may be expressed in both forms.

3. Write in full the following:—

Hide:	Past Tense,	Indicat.,	Act.
Slay	"	"	"
Lie	"	"	"
Fling	"	"	Pass.
Shear	"	"	"

4. What is the literal meaning of Auxiliary Verb? Write a list of the auxiliaries in English (infin. mood), and state what their functions are.

5. State and illustrate the various uses of *but, that, so.*

6. Analyse minutely the following sentences:—

(*a*) In the English language, most of the relations between nouns are expressed by prepositions.

(*b*) His brother entreated him to make his escape while there yet was time.

c. Towards the east lies all that fertile tract, over which more than ten international wars have been fought, a region fair as Eden, and yet it has been for generations the battle-ground of Europe.

7. Give the substance of Mason's remarks on the word *the*, with special reference to (*a*) its duties, (*b*) its origin.

8. Determine the number of each of the following words (*sing. or plu.*), and state your reasons in each case:—summons, alms, riches, wages, politics, pains.

9. Explain fully, with the help of examples, the difference between adverbs employed *simply* and employed *relatively*.

ENGLISH COMPOSITION AND ESSAY.

WEDNESDAY, 18TH SEPT. :—AFTERNOON, 2 TO 4.

Examiners..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Distinguish between the proper meaning and the misapplication of each of the following :—allude, climax, female, mutual, verbal.

2. Correct or improve the following sentences, and give your reasons for so doing :—

(*a*) He succeeded in gaining the universal love of all men.

(*b*) I expect that you have no reason to expect the arrival of your friend.

(*c*) Being very tired, it seemed to him wise to take some rest.

(*d*) The seventeenth century had a different notion of books and women than the nineteenth.

(*e*) These streets were always kept lighted, and the expense defrayed by a special tax.

3. Write a short essay on one of the following subjects :—

(*a*) One of the Waverley novels.

(*b*) Pleasures of country life.

(*c*) Loyalty.

ENGLISH HISTORY.

WEDNESDAY, SEPT. 18TH :—10.30 A.M.

Examiner,..... .....CHAS. E. MOYSE, B.A.

FIRST YEAR.

1. Mention the three chief tribes of Teutonic invaders, and state in what parts of England each settled.

2. Write briefly on each of the following : Bretwalda, treaty of Wedmore, Stamford Bridge, St Augustine, the battle of the Standard, the Constitutions of Clarendon.

3. State briefly when and in what way Scotland figures prominently in English history between 1300 and 1700.

4. State what you know concerning the Field of the Cloth of Gold, the Star Chamber and the Act of Supremacy.

In whose reigns were the following conspicuous, and in what way :—Sir Thomas Moore, Earl of Shaftesbury, Sir Francis Bacon, Simon de Montfort, Robert Clive.

5. Trace the descent (*a*) of Victoria from George I; (*b*) of George I from James I.

Under each of the Hanoverian sovereigns mention a famous statesman of the reign, and also an important parliamentary measure with which he was concerned.

SECOND YEAR.

[Candidates are required to answer 2, 4, 5 of the First Year set, and also the following :

6. Trace the descent of Henry VII from Edward III, and give a sketch of the war of the Roses.

7. Explain the terms wergild, ealdorman, justiciar, tenant-in-capite, aids, justices-in-eyre.

FRENCH.

THURSDAY, SEPT. 19TH :—MORNING, 9 TO 12.

Examiner,..... .... P. J. DAREY, LL.D.

(*Le Quaker.*)

1. *Translate into English* :—Je fuis (1) les assemblées de plaisir, les spectacles, le jeu (2) ; car je serais bien à plaindre (3) de remplir de ces bagatelles un cœur en qui Dieu doit habiter. Je ne fais jamais de serments, pas même en justice ; je pense que le nom du Très-Haut ne doit (4) point être pris en vain dans les débats misérables des hommes. Lorsqu'il faut que je comparaisse (5) devant les magistrats pour les affaires des autres (car je n'ai jamais de procès), j'affirme la vérité par un *Oui* ou par un *Non*, et les juges m'en croient (6) sur ma simple parole. Je ne vais jamais à la guerre ; ce n'est pas que je craigne (7) la mort, au contraire je bénis le moment qui m'unit à l'Etre des êtres, mais c'est que je ne suis ni loup, ni tigre, ni dogue, mais homme, mais chrétien. Mon Dieu qui m'a ordonné d'aimer mes ennemis, ne veut pas sans doute que je passe la mer pour aller égorger mes frères, parce que des meurtriers vêtus de rouge, avec un bonnet haut de deux pieds, enrôlent des citoyens en faisant du bruit avec deux petits bâtons sur une peau d'âne bien tendue.

2. Write the primitive tenses of the verbs marked 1, 3, 4, 6?

3. How do you form the plural of the noun *jeu*? Give the rule. Give also the rules for nouns ending in *al* and *ail*. Give 3 exceptions.

4. At what tense are the verbs 5 and 7? Give the infinitive of those verbs.

5. Give the complete list of the demonstrative pronouns.

GERMAN.

Thursday, September 19th.

Examiner,.....P. Toews, M. A.

I. Translate into English:

Einsmals, erinnere ich mich, kam mir ein blökendes Lamm, welches sich von der Heerde verirrt hatte, so nahe, daß ich es gar leicht hätte würgen können und ich that ihm nichts. Zu eben dieser Zeit hörte ich die Spöttereien und Schmähungen eines Schafes mit der bewundernswürdigsten Gleichgültigkeit an, ob ich schon keine schützenden Hunde zu fürchten hatte.

"Und das alles kann ich dir bezeugen," fiel ihm Freund Fuchs, der ihn zum Tode bereiten half, ins Wort. "Denn ich erinnere mich noch gar wohl aller Umstände dabei. Es war zu eben der Zeit, als du dich an dem Beine so jämmerlich würgtest, das dir der gutherzige Kranich hernach aus dem Schlunde zog."

G. E. Lessing.

Give the infinitive of kam, that, fiel, half, zog; and the plural of Lamm, Heerde, Hund, Kranich.

II. Translate into German:

These men travelled (reisen) through towns and villages (Dorf-n.). The leaves of the trees are large and beautiful. This gentleman would buy my houses, if he had money enough. Even the beggars of this city have shoes and stockings. Who has bought this hat? I have bought it myself in the city, and paid four dollars for it. Were you ever in this church? I was never in it. The doctor shook (schütteln) his head, for he had no hope (Hoffnung). Miss B. has sent (schicken) her mother a present.

III. Give the double form of the plural of Bank, Band, Land, Wort, and the different meaning for each.

IV. Decline: Name, Professor, Philosoph'.

V. Translate: For whom is this diamond? Which of your sisters is learning German?

VI. Decline: Welcher Mann.

GERMAN.

SECOND YEAR.

THURSDAY, SEPTEMBER 19TH.

Examiner,.....P. TOEWS, M. A

I. Translate into English:

Die Geſchichte ward bald in der ganzen Gegend bekannt. Ein Schalk, der ſie erfuhr, nahm ſich vor zu verſuchen, ob auch gegen ihn der Flußgott ſo gnädig ſein würde. Er ließ ſeine Axt mit Willen in den Strom fallen, flehte zum Flußgott und hatte die Freude ihn aufſteigen zu ſehen. Er klagte ihm ſeinen Verluſt, und der Gott brachte, wie damals, eine goldene Axt hervor. "Iſt ſie das, mein Sohn?" fragte er. "Ja, ja, das iſt ſie!" antwortete der Lügner, und griff ſchon danach. "Halt Nichtswürdiger!" erſcholl nun die Stimme des erzürnten Geiſtes; "glaubſt du den zu hintergehen, der bis in das Innere deines Herzens ſieht? Zur Strafe deines Betrugs verliere auch das, was bisher dein war!" Und ohne Axt mußte der Lügner nach Hauſe wandern.

Give the principal parts of erfuhr, fallen, aufſteigen, brachte, erſcholl; and the plural of Axt, Flußgott, Nichtswürdiger, Geiſt and accent the words underlined.

Parse Sich in the sentence: Ein Schalk ..... nahm ſich vor zu verſuchen.

Write a note on Lohn.

II. Translate into German: The trees in these woods have been very beautiful, but now the leaves have become yellow. He said, he had arrived (angekommen) yesterday. He asked me, which of those gentlemen was (subjunctive) my brother. The students, to whom these books belong (gehören), do not study them diligently, which is a pity (Schade). I do not know the book, the title of which you have just named (nennen). My knife is of good, hard steel. What kind of horses have you bought? Please, fill my glass with fresh water. Have you heard anything new in the city? About (über) whom were you speaking?

Which boy's books had you?

III. Decline: good gold (golden) pen; old black horse.

IV. Translate: Have you all you need? (brauchen). The man, in whose houses we lived, are the brothers of our neighbour. What were you thinking of, (an) when you met them yesterday? I sent them to her a week ago. We sent him that two weeks ago.

FIRST YEAR EXHIBITIONS.

GREEK.

MONDAY, SEPT. 16TH :—MORNING, 9 TO 12.

Examiner, ... A. J. EATON, Ph.D

1. Translate, Xenophon, Anab., Bk. I., ch. 1, §§ 12-13.

2. (*a*) Explain the construction of στρατηγοῖς ; of ἀναβᾶσι. (*b*) Supply the ellipses after καὶ ταῦτα, ἰόντων, and ὥσπερ. (*c*) ἐπεσχετο δώσειν: does this follow the rule as to the *tense* of the infinitive after verbs of *hoping, promising*, etc., in Greek? Compare the Latin construction. (*d*) Give the direct form of all the quoted sentences in this passage.

3. Translate: Homer, Iliad, Bk. IV., vss. 155-168; 422-431.

4. (*a*) Divide 166, 167, 168, into feet, marking the place of the principal Caesura in each verse. (*b*) Write the Attic forms of ἦς, ἐτέλεσσεν, ἰρή, πόλεμόνδε, φράζεαι. (*c*) Explain the grammatical construction of θάνατον, μάχεσθαι, ἦς, ὀλώλῃ, αἰθέρι, ἀπάτης, χέρσῳ, φαίης.

5. (*a*) Give the derivation of σπονδαί, ἀκρητοι, αἰολοθώρηξ, μενεπτόλεμος.

(*b*) Translate the following epithets, and show to whom each is applied by Homer: Ἀλαλκομενηίς, φιλομμειδής, ἀρηίθοος, ἀγκυλομήτης, κλυτοτόξος, πολύμητις.

6. Translate, Demosthenes, Philippic I., §§ 10-11: πότ' οὖν.... ἀμέλειαν.

7. (*a*) Remark upon the use of εἶπε, γάρ, νή; subjunctives ᾖ, πάθῃ, optative γένοιτο.

(*b*) Account for the case of the following words: ἐλευθέροις, αὐτῶν, πράγμασι.

8. How (and when) had Amphipolis fallen into the hands of Philip? Give a further account of the conquest of Philip, the growth of whose

power prompted the First Philippic. What plan was submitted by Demosthenes in this oration? To what extent did the Athenians act upon his advice?

9. Translate, Philippic II., §§ 20-21: *πῶς γὰρ οἴεσθ'....αὗται λίαν ὁμιλίαι.*

10. (*a*) Give the geographical position of Olynthus, Anthemus, Messene, Potidaea. (*b*) *ἀποίκους*: define its meaning. How does it differ from *ἐποίκους*? (*c*) What is the force of *ἄν* in the phrase *λέγοντος ἄν τινος*? (*d*) Give the principal parts of the verb *πραθέντες*, and explain the formation of the present stem.

LATIN.

MONDAY, SEPTEMBER 16TH; AFTERNOON, 2 TO 5.

Examiner,.....A. J. EATON, PH. D.

1. Translate: Cicero, in Catilinam, I. 5: *Magna dis.....esse coniunctam.*

2. Define the following expressions: *Pontifex Maximus; Iupiter Stator; consul designatus; Quirites; Palatium* (give English derivative, and explain how it gets its present meaning).

3. Translate (explaining grammatically the words in Italics):

Potestne tibi haec lux, Catilina, aut huius caeli spiritus esse iucundus, cum *scias* horum esse neminem qui *nesciat* te *pridie Kalendas* Ianuarias Lepido et Tullo *consulibus* stetisse in comitio *cum telo?*

4. Translate: Virgil, Aeneid I., 157-172.

5. Note the various uses of the ablative (without prepositions) in the last passage.

6. Translate, with an explanation of the construction of italicized words:

(*a*) Incute vim ventis, *submersasque* obrue puppes.

(*b*) Pars in frusta *secant*, *veribusque* trementia figunt.

(*c*) Infert se septus *nebula*, mirabile *dictu*,
per medios miscetque *viris*; neque cernitur ulli.

(*d*) Namque *videbat*, uti bellantes Pergama circum
hac *fugerent* Graii, premeret Troiana iuventus;
hac Phryges; *instaret curru* cristatus Achilles.

(*e*) O socii,— neque enim ignari sumus *ante malorum*,—
o passi graviora, dabit deus his quoque finem.

7. Translate: Horace, Odes, Bk. III., (*a*) Ode III., vss. 1-36; (*b*) Ode XXX.

8. Explain the mythological allusions in the first passage (Ode III. 1-36), and to Libitina in Ode XXX. What is the derivation of *seditio'* and what Greek word does it represent? In v. 31 Juno calls Romulus her grandson; explain.

9. What figure of speech in *regalique.....altius* (XXX. 2)? Compare the phrase *purpurarum sidere clarior usus* (Odes III., 1, 42). From what verb is *series* derived (XXX. 4)? Give three English derivatives from the same root. Remark on the constructions *pauper aquae* and *regnavit populorum* Write short explanatory notes on the following: *Aeolium carmen* (XXX. 13), *Delphica lauro* (15), *Melpomene* (16), *fatalis index* (III. 19), *mulier peregrina* (20), *Troia sacerdos* (32).

10. Explain fully the metres of Odes III. and XXX. of the third book.

GRAMMAR AND COMPOSITION.

THURSDAY, SEPTEMBER 19TH :—AFTERNOON, 2 TO 5.

Examiner,..... A. J. EATON, M.A., Ph.D.

1. Decline *χώρα*, *δῶρον*, *ἠχώ*, *ἡδίων*; *epitomē*, *Anchīsēs*, *senex*, *fidēs* (carefully accenting in Greek, and marking the long vowel in Latin).

2. Compare the adjectives *φίλος*, *μέγας*, *felix*, *acer*; the adverbs *σοφῶς*, *care* and *audacter*.

3. Give in Latin and Greek the following numbers: *ninety*, *five thousand*, *eighteen hundred and eighty-nine*.

4. (*a*) What are the terminations for the locative case in Latin in the several declensions? (*b*) Give the eight classes into which Greek verbs in *ω* are divided, with reference to the formation of the present stem, and give an example of each class. (*c*) On what supposition is the syllabic augment with some verbs beginning with a vowel explained? What is the Attic reduplication? (*d*) Upon what three stems may the parts of the Latin verb be formed? Show by examples how these stems are formed?

5. Inflect *εἰμί* throughout: *ĕdo* in the present and imperfect indicative active.

6. Decline *hic*, *idem*. Distinguish in use the demonstratives *hic*, *ille*, *iste*, *is*.

7. Translate the following phrases, and explain the grammatical constructions:

(*a*) ἦλθε λυσόμενος θύγατρα. (*b*) μὴ ποίει τοῦτο. μὴ ποιήσῃς τοῦτο. (*c*) ὅτι ἂν βούληται δίδωμι. (*d*) εἰ ἔγραψεν, ἦλθον ἄν. (*e*) longior quam latior acies erat. (*f*) in colle medio. (*g*) venit mihi in mentem illius diei. (*h*) cui Africano fuit cognomen.

8. (*a*) Distinguish between *fŭgit* and *fūgit*; *pŏpulus* and *pōpulus*; mălus and malus; rĕgis and rēgis; lŭtum and lūtum.

(*b*) Mark the syllabic quantity in the following words, and tell what measures they represent: *pater, ama, Roma* (ablative), *hominis, Caesaris, vidi, ingentes, oppositis, consules, amicos, itineri.* (*c*) Give the meaning of the following derivative terminations with an example:-*bilis,-idus,-tura,-ades,-osus,-brum,urio.*

9. (*a*) How are adverbs regularly formed from adjectives in Latin and Greek? Give examples. (*b*) What are denominative verbs, and how may they be formed?

10. Translate into Greek: (1) I admire your virtue and that of your friend. (2) Cyrus marches against the king of the Persians. (3) Philip was their general, with two others. (4) If any one was to do this, he would do the greatest injury to the State.

11. Translate into Latin:

A. (1) Your good faith and dutifulness are to be praised. (2) Caesar threatened to lay waste our country with fire and sword. (3) I sent you the best and bravest foot-soldiers that I had with me; and having promised to send them back, you reluctantly kept your word. (4) I have lived, said he, so virtuously, that I quit life with resignation.

B. When Hannibal, after taking the city, saw that the Carthaginians were so taken up with slaughter that no one could fairly hear what he directed for the noise, he called the commanders of the young men together, and ordered them to bid their troops keep quiet and spare the Tarentines; *the Carthaginians must not slay, must not plunder; for the hearts of towns-people are not won by the taking of their cities. "If you will keep quiet," said he, "Fabius who, I know, is not far from Tarentum, will set the Romans in motion to seize the city by forced marches; if no confusion arises, I will arrange by a stratagem that he cannot escape me.

* Render all that follows into Indirect Discourse.

EUCLID.

TUESDAY, SEPTEMBER 17TH :—MORNING, 9 to 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If any point within a triangle be joined to the extremities of the base, find how much the angle contained by the joining lines exceeds the vertical angle of the triangle.

2. Prove by Euclid, Prop. 32, Bk. I., that if the middle point of the hypotenuse of a right-angled triangle be joined to the right angle, the joining line is equal to half the hypotenuse.

3. Prove that the square on any straight line is four times the square on its half.

4. In equal circles the arcs which subtend equal angles at the centres are equal.

(2) If two chords of a circle are parallel, they intercept equal arcs.

5. From a given circle cut off a segment which shall contain an angle equal to two-thirds of a right angle.

6. In a given circle inscribe a triangle equiangular to a given triangle.

7. Parallelograms which are equal in area, and which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

8. Equiangular parallelograms are to one another in a ratio compounded of the ratios of their sides.

ALGEBRA—ARITHMETIC.

TUESDAY, SEPTEMBER 17TH :—AFTERNOON, 2 TO 4.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Prove the formula for finding the sum of a series in Arithmetical Progression when the first term, the common difference and the number of terms are given.

2. Find the sum of n terms of the series $\frac{1}{3} + \frac{1}{2} + \frac{3}{4} +$ &c.

3. Find the sum of an infinite number of terms of the series $\frac{3}{4} - \frac{1}{2} + \frac{3}{8} +$ &c., proving any formula employed.

4. Find a number composed of two digits which is equal to four times the sum of the digits, and such that, by reversing the digits, a number is formed equal to seven times that sum.

5. Solve the equations :—

(*a*) $\dfrac{a - \sqrt{2ax - x^2}}{a + \sqrt{2ax - x^2}} = \dfrac{x}{a-x}$.

(*b*) $\dfrac{x}{a} + \dfrac{y}{b} = 1 - \dfrac{x}{c}$; $\dfrac{y}{a} + \dfrac{\cdot}{b} = 1 + \dfrac{y}{c}$.

(*c*) $a + x + \sqrt{a^2 + x^2} = b$

(*d*) $\dfrac{1}{x-1} - \dfrac{2}{x+7} = \dfrac{1}{7(x-1)}$

6. Find the time between 5 and 6 o'clock when the hour and minute hands of a clock are together.

7. In a school where there are 260 boys, the number of boys under 11 years of age is to the number over 11 in the ratio of 3 to 2, find the number of each.

8. Find what sum of money will amount to $2,000 in 2 years at 5 per cent. per annum compound interest.

9. Divide $8,470 into parts proportional to $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$.

10. Find the weight of a sphere of lead 1 foot in diameter, if lead be $11\frac{1}{3}$ times as heavy as water and a cubic foot of water weigh 1,000 oz., assuming that the volume of a sphere whose radius is r is $\frac{4}{3} \times \frac{22}{7} \times r^3$.

11. Reduce the circulating decimal $.\dot{1}39867$ to a vulgar fraction.

12. The diagonal of a square is 1210 yards long, how many acres does the square contain.

ENGLISH LANGUAGE AND LITERATURE.

SHAKSPERE :—*As You Like it.*

FRIDAY, SEPT. 20TH :—AFTERNOON, 2 TO 4.

Examiners,..... { CHAS. E. MOYSE, B.A.
PAUL T. LAFLEUR, M.A.

1. Write a short essay, giving your opinion of the design and merit of *As You Like It.*

2. Quote sentiments expressed by the leading characters in the play (one for each), with the force of which you have been impressed, and state precisely in what connection each occurs.

3. Trace Rosalind through the play.

4. Give an outline of the scene in the Forest from the point where Orlando suddenly enters to the end.

5. Put into the language of the play (*a*) He that escapes me.....will have to acquit himself well: three handsome young men: we essay'd to steal; inexpressible: I have since I was three years old associated with a magician; whistles in its sound; some life-like touches; my father hated his father excessively; the scurvy clown. Make notes on the changes, and refer to place and speaker.

6. In what meanings are the following words used in the play: quail, inquisition, practices, wearing, dog-apes, compact, bravery, parlous, right se n night, kindled, moonish, rascal, puisny, bugle, prevents, address'd, defied?

7. Mention peculiarities in the construction of Shakespeare's verse, and quote from the play in illustration.

SECOND YEAR EXHIBITIONS.

GREEK.

MONDAY, SEPT. 16TH :—MORNING, 9 TO 12.

Examiner,.....A. J. EATON, M.A., PH.D.

1. Translate: Homer, Odyssey VI., vss. 223-246.

2. Explain these forms and give the Attic equivalents: ἴσαν (v. 223), λοέσσατο (v. 227), εἰσιδέειν (v. 230), ὄφειτο (v. 237), κἀδ (v. 230). From what present indicature does the verb ἄδω come? Give the parts of this verb that are in use, the root and formation of the present stem. Explain the subjunctive εἴπω (v. 239) and optatives in vss. 244-245.

3. How was an *hiatus* avoided in Greek? Remark on the hiatus in line 224; also in lines 228, 234. Scan vss. 231, 238, remarking on any peculiarities. Mark and name the Caesura in the first four lines (223-226).

4. Discuss any peculiarities of grammatical construction in vss. 232-235.

5. Translate: Herodotus, Bk. III., chaps. 34 and 35.

6. εἰ.... τύχοιμι: some MSS. have ἢν..... τύχω. Which is to be preferred? Explain.

Explain (*a*) the forms *κοῖον*, *ἐπαινέαι*, *ὦν*, *φάναι*, *βαλέειν*; (*b*) the grammatical construction of *δοκέοι*, *εἴη*, *ἁμάρτω* in regard to mood and tense; *παιδός*, *καρδίης*, *ἀνθρώπων* in regard to case; (*c*) the force of *ἄν* in the sentence *οὐδ' ἂν....ἂν καλῶς βαλέειν*.

7. (*a*) *οὐδ' ἂν αὐτον..τὸν θεὸν..βαλέειν*. To what is the allusion in this passage? (*b*) Write a short note on the life and times of Herodotus. Give an account of the invasion of the Ethiopians by Cambyses, as related by Herodotus.

8. Translate: Demosthenes, Olynthiac I., § 16-18: *τὸ μὲν οὖν ἐπιτιμᾶν... βοήθειαν εἶναι.*

9. *ἐπιτιμᾶν... σώζειν*: remark on this and similar uses of the infinitive. *ὑποστείλασθαι*: what is the literal meaning of this word, and how is it employed here? *πράγμασιν ὑμῖν* (§ 17): explain the use of these datives. Classify the conditional sentences in § 18.

10. Translate: Demosthenes, Olynthiac II, §§ 24, 25: *ἀλλ' ἐκεῖνο θαυμάζω.... ὁ χρόνος διελήλυθεν.*

11. Write out an analysis of the first Olynthiac.

12. Translate (at sight):

Ὁ μὲν οὖν παρὼν καιρὸς, ὦ ἄνδρες Ἀθηναῖοι, εἴπερ ποτὲ, πολλῆς φροντίδος καὶ βουλῆς δεῖται· ἐγὼ δὲ οὐχ ὅ τι χρὴ περὶ τῶν παρόντων συμβουλεῦσαι χαλεπώτατον ἡγοῦμαι, ἀλλ' ἐκεῖν' ἀπορῶ, τίνα χρὴ τρόπον, ὦ ἄνδρες Ἀθηναῖοι, πρὸς ὑμᾶς περὶ αὐτῶν εἰπεῖν. πέπεισμαι γὰρ ἐξ ὧν παρὼν καὶ ἀκούων σύνοιδα τὰ πλείω τῶν πραγμάτων ὑμᾶς ἐκπεφευγέναι τῷ μὴ βούλεσθαι τὰ δέοντα ποιεῖν, οὐ τῷ μὴ συνιέναι. ἀξιῶ δὲ ὑμᾶς, ἂν μετὰ παρρησίας ποιῶμαι τοὺς λόγους, ὑπομένειν, τοῦτο θεωροῦντας εἰ τἀληθῆ λέγω καὶ διὰ τοῦτο, ἵνα τὰ λοιπὰ βελτίω γένηται· ὁρᾶτε γὰρ ὡς ἐκ τοῦ πρὸς χάριν δημηγορεῖν ἐνίους εἰς πᾶν προελήλυθε μοχθηρίας τὰ παρόντα.

LATIN.

MONDAY, SEPT. 16TH: AFTERNOON, 2 TO 5.

Examiner,..... .....A. J. EATON, PH. D.

1. Translate: Horace, Odes, Bk. I., VI. and XXXV., vss. 1-20.

2. Account for the grammatical construction of the following words: *Vario* (VI.1), *alite* (2), *duce* (4), *dicere* (5), *lyrae* (10); *regis* (XXXV.1), *tollere* (2), *veste*, (24). Note also the construction and position of the two adjectives *tenues* and *grandia* (VI.9). *ingeni*; explain the form.

3. (*a*) What double meaning does *praesens* (XXXV.2) have, and how can it be followed by the infinitive? (*b*) What words of the first lines of the Iliad and Odyssey do *stomachus* and *duplex* represent? (*c*) Write explanatory notes on the following: *Maeonii carminis* (VI. 2), *gravem Pelidae stomachum* (VI. 6), *saevam Pelopis domum* (VI. 8), *O diva .....Antium* (XXXV. 1), *Carpathium pelagus* (XXXV. 8), *purpurei tyranni* (XXXV. 12). (*d*) What do you know of the military projects alluded to in Ode XXXV., 29-32? From these allusions what date may be inferred as to the composition of this ode?

4. Give the scheme of the metre in which each of these odes is written, and scan the following lines: VI., vss. 5-8; XXXV., vss. 11 and 17.

5. Translate: Livy, Bk. XXII. (*a*) Chap. 8: *Priusquam satis..... aestimandum esse;* (*b*) Chap. 32: *Consules Atilius.....eisdem artibus bellum gererent.*

6. (*a*) Chap. 8.—Give the rule for the use of the subjunctive after *priusquam. magis...gravior:* is this pleonasm? Explain the mood of *ducere*, of *sentiretur, aggravaret.* (*b*) Chap. 32.—Explain (1) the case of *quod reliquum, ei;* (2) the mood and tense of *repetiturus fuerit, gererent.*

7. Where was CANNAE? Give the date and a description of the battle fought there.

8. Translate: Virgil, Georgics, Bk. I., vss. 231-256.

9. Give the exact meaning and derivation of *examen, habitus, pabulum cominus, fissile, cubile, Eumenides, cognosco.*

10. Translate (at sight):

In parte operis mei licet mihi praefari, quod in principio summae totius professi plerique sunt rerum scriptores, bellum maxime omnium memorabile, quae unquam gesta sint, me scripturum, quod Hannibale duce Carthaginienses cum populo Romano gessere. Nam neque validiores opibus ullae inter se civitates gentesque contulerunt arma, neque his ipsis tantum unquam virium aut roboris fuit, et haud ignotas belli artes inter sese, sed expertas primo Punico conserebant bello, et adeo varia fortuna belli ancepsque Mars fuit, ut proprius periculum fuerint, qui vicerunt. Odiis etiam prope maioribus certarunt quam viribus, Romanis indignantibus, quod victoribus victi ultro inferrent arma, Poenis, quod superbe avareque crederent imperitatum victis esse. Fama est etiam, Hannibalem annorum ferme novem, pueriliter blandientem patri Hamilcari, ut duceretur in Hispaniam, quum, perfecto Africo bello, exercitum eo traiecturus sacrificaret, altaribus admotum, tactis sacris, iure iurando adactum, se quum primum posset, hostem fore populo Romano.

GENERAL PAPER.

THURSDAY, SEPT. 19TH:—AFTERNOON, 2 TO 5.

Examiner,.....A. J. EATON, M.A., PH. D.

(*Candidates will answer questions* 4, 7 *and* 8 *of the paper on Grammar for First Year Exhibitions and the following.*)

1. When and by whom were the following countries brought under the dominion of Rome; Sicily, Gaul, Macedonia, Egypt, Africa, Illyricum? Describe the provincial system of government.

2. Write on any two of the following topics: (*a*) The Agrarian Law of Tiberius Gracchus; (*b*) Athens under Pericles; (*c*) Struggle between Sparta and Thebes.

3. Relate the myths of Phrixus and Helle, Bellerephon, Theseus and Ariadne, Persephone.

4. (*a*) Connect *etymologically* the following words with any corresponding Latin words: ἅλς, ἡδύς, βροτός, ἐλαχύς, ϑήρ, χειμών, ἕπομαι; also the following words with corresponding English words: *qui, genu, veho, hortus, dens.* (6) Give the derivation and meaning of the following words: βῆμα, δάκτυλος, Δευτερόνομιον, ἐλπίς, μείζων; toga, sollemnis, simplex; anacoluthon, apothecary, ambrosia, duel, pilgrim.

(*c*) Account for the *d* in *pro-d-eo re-d eo, pro-d-esse* (cf. *pro-sum.*)

5. Which are the *open vowels*? the *medial*? Give the natural sequence of vowels from strong to weak. Explain the terms *tenues* and *mediae* as applied to the mute consonants. Give what proof you can that *c* was always sounded *k* in Latin.

6. (*a*) Give the constructions, as to mood and tense, with *cum* and *donec.* (*b*) How are future conditions expressed in Greek and Latin. Illustrate by examples.

7. Translate into Greek (accenting):—

(1) Not only you, but also your friends, will prosper if you do this. (2) They who have sinned against the state will not escape with impunity. (3) The constitution will have been perfectly arranged, if such a guardian superintends it. (4) Would that the physician had been here! (5) But if we shall fall into the power of the king, what will prevent us from being put to death, after suffering all that is most terrible?

8. Translate into Latin (marking all long vowels):

The excellent Balbus, when in his old age, while studying Greek at Corinth, used to say that he was afraid he should not succeed like Cato in learning a new language, for his memory failed him and his old energy had

gone. And indeed, although some one in Cicero says that he has no fault to find with old age, we certainly must not expect to retain all the vigor of youth. So do not promise to perform when old, what you have neglected when young. I have often asked how old Balbus was when he began Greek; but I could never ascertain his exact age. But I believe he was over eventy.

ORDINARY MATHEMATICS.

TUESDAY, SEPT. 17TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Define duplicate ratio. Prove that equiangular triangles are in the duplicate ratio of their homologous sides.

a. Show that this is the same as the ratio of the squares on the sides.

2. If in a right-angled triangle a perpendicular be let fall from the right angle on the hypotenuse, prove that either side is a mean proportional between the whole hypotenuse and the segment of it centerminous to the side.

3. In a given circle inscribe a regular pentagon.

4. On a given straight line construct a segment of a circle containing an angle equal to two-thirds of a right angle.

5. In any triangle the sum of the sides is to their difference as the tangent of half the sum of the base angles is to the tangent of half their difference.

6. Find the sine, cosine, tangent, secant and versed sine of 60°.

7. If the angle subtended by the Moon at the eye be half a degree, explain the manner in which its diameter may be calculated approximately, provided we know its distance from the earth.

8. Prove $\tan (A + B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$

9. Solve the equations :—

(*a*) $ax^2 + 5a^2x + \dfrac{9a^2}{4} = 0.$

(*b*) $y = 9 - 3x$; $x^2 = 10 - xy.$

(*c*) $\dfrac{4x+3}{3x+4} - \dfrac{3x-4}{4x-3} = \dfrac{7}{12}$

(*d*) $2x - 7y = 8$; $4y - 9x = 19.$

10. Find the factors of $6x^2 + x - 12$.

11. Arrange in the order of magnitude $4\frac{3}{4}$, $3\frac{3}{5}$, $5\frac{2}{3}$.

12. Divide the number 90 into two such parts, that if half of the greater part be added to double of the smaller, the result is the original number 90.

GEOMETRY.

TUESDAY, SEPTEMBER 17TH :—AFTERNOON, 2 TO 5.

Examiner,..... ....ALEXANDER JOHNSON, LL.D.

1. If two circles touch three given circles, the contacts being of the same kind, the three chords of contact meet in a point which is the radical centre of the three and a centre of similitude of the two.

2. Describe a circle passing through a given point and touching two given circles.

3. If four secants be drawn through either centre of similitude of two circles, the anharmonic ratio of any four of the points where the secants cut one of the circles is the same as that of the four corresponding points on the other circle.

4. If two pencils have the same anharmonic ratio, and if two angles of the one be respectively equal to two angles of the other, the two remaining angles shall also be equal, or one of them shall be the supplement of the whole angle of the other pencil.

5. Prove Brianchon's Theorem, that the straight lines joining the opposite angles of an hexagon described about a circle pass through the same point.

6. If through a fixed point two transversals be drawn intersecting two given straight lines, and if the points of section be joined transversely, find the locus of the point of intersection of the joining line.

7. Through a given point, draw a straight line so as to form with the sides of a given angle a triangle of given area.

8. If a perpendicular be drawn from the right angle of a triangle to the hypotenuse, the square on its reciprocal is equal to the sum of the squares on the reciprocals of the sides.

9. Describe a circle touching two given straight lines and a given circle.

10. The perpendiculars from the middle point of the base of a triangle on the bisectors of the internal and external vertical angles cut off from the two sides portions equal to half the sum or half the difference of the sides.

11. A triangle is given in species, one vertex turns round a fixed point whilst another vertex moves along the circumference of a given circle; find the locus of the third vertex.

12. Three times the sum of the squares on the sides of a triangle is equal to four times the sum of the squares on the bisectors of the sides.

THEORY OF EQUATIONS—ALGEBRA. (*Second Year Exhibition.*)

FRIDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Find to three places of decimals the root situated between 9 and 10 of the equation

$$x^4 - 3x^2 + 75x - 10000 = 0$$

2. Apply Newton's method to calculate a root of the equation

$$x^3 + 3x - 5 = 0$$

3. Find a superior limit to the positive roots of

$$x^5 + 3x^4 + x^3 - 8x^2 - 51x + 18 = 0$$

proving the method you employ.

4. Solve the equation

$$x^3 + 3x = \tfrac{3}{2}$$

5. Find the roots of $x^6 = 1$.

6. Find the equation whose roots each exceed by 2 those of

$$4x^5 - 2x^3 + 7x - 3 = 0.$$

7. If $f(x)$ be any rational integral function of x and $f^1(x)$, the first derived function: then will

$$f_1(x) = \frac{f(x)}{x-a} + \frac{f(x)}{x-b} + \frac{f(x)}{x-c} + \text{&c.}$$

where a, b, c, etc., are the roots of the equation $f(x) = 0$.

8. Solve the equation $x - 1 = 2 + \dfrac{2}{\delta\sqrt{x}}$

9. Sum the series $1^3 + 2^3 + 3^3 + \text{&c.} + n^3$.

10. If $x = ay + by^2 + cy^3 + \text{&c.}$, find the value of y in terms of x.

ENGLISH GRAMMAR.

WEDNESDAY, SEPTEMBER 18TH:—MORNING, 9 TO 10.30 AND 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A.
P. T. LAFLEUR, M.A.

(Candidates for entrance only are responsible for the first five questions. Candidates for exhibitions, for the whole paper.)

1. Prove, by means of one decisive example, that the *grammatical value* of a word depends mainly upon the use and position of the word in the sentence, and not upon the word itself.

2. Mention, illustrate with example, and define briefly the tenses and moods of the modern English verb, which possess inflection. State the exact function or functions of any one.

3. (*a*) What is meant by saying that a participle is used *absolutely?* To what foreign forms of construction may the presence of this in English be ascribed? (*b*) Explain clearly the difference between the past participle used *attributively* and used *predicatively*. Illustrate with example. (*c*) Shew fully, with the help of examples, the distinction between the present (or imperfect) participle and the gerund (or verbal noun).

4. What are the different kinds of words and forms of expression which may stand as the subject of a sentence? Prove by means of one progressively expanded example, that the subject is in every instance equivalent to a noun or substantive.

5. Analyse minutely the following sentences:—

(*a*) Till there be security amongst men for the keeping of the law of nature one towards another, men are still in the estate of war, and nothing is unlawful to any man that tendeth to his own safety.

(*b*) ..... If 'tis false,
Then the whole science of the stars is false;
For know, I have a pledge from Fate itself,
That he is the most faithful of my friends.

(*c*) You have some sick offence within your mind,
Which, by the right and virtue of my place,
I ought to know of.

6. State, and illustrate with short examples, the different kinds of adverbial clause.

7. Write four Teutonic verbal prefixes, and four Teutonic verbal suffixes and attach them to roots; three *hybrids*; and give the derivation of kerchief, grandame, sudden.

8. Write the names of five modern foreign languages (not reckoning French) from which the English language has borrowed words, and give two examples of derivatives from each.

ENGLISH LANGUAGE AND LITERATURE.

SHAKSPERE:—*As You Like It.* TRENCH:—*Study of Words.*

FRIDAY, SEPT. 20TH:—AFTERNOON, 2 TO 5.

Examiners,..... { CHAS. E. MOYSE, B.A. / PAUL T. LAFLEUR, M.A.

[Candidates will take the First Year paper on *As You Like It.*]

8. Make notes on the italicized letters in a*f*fiance and renown; c*æ*ruleus and turt*l*e.

9. What does Trench say about the older Greek word for *poet* and the limitation of *physician?*

10. In what connection are Moffatt, Boiardo and John of Gaunt mentioned, and in what way? Of what are the words *transport* and *rapture* an evidence? Use them in proof.

11. Notice the history involved in mutton, pagan, almanack, dunce dimity, majolica.

12. Show that *resent, retaliate, animosity,* have deteriorated.

13. Distinguish between the homonyms of the following words by giving their etymologies: *port, salt, page, mosaic, seal.*

14. What arguments might be used against Trench's views regarding Phonetic spelling.

FRENCH.

THURSDAY, SEPT. 19TH:—MORNING, 9 TO 12.

Examiner..... P. J. DAREY, LL.D.

1. Translate into English:—

Un pauvre bûcheron, tout couvert de ramée
Sous le faix des fagots aussi bien que des ans
Gémissant et courbé, marchait à pas pesants,
Et tâchait de gagner sa chaumine enfumée.

Enfin n'en pouvant plus (1) d'effort et de douleur,
Il met bas son fagot, il songe à son malheur.
Quel plaisir a-t-il eu depuis qu'il est au monde?
En (2) est-il un plus pauvre en la machine ronde?
Point de pain quelquefois, et jamais de repos:
Sa femme, ses enfants, les soldats, les impôts.
Le créancier et la corvée,
Lui font d'un malheureux la peinture achevée.
Il appelle la mort. Elle vient sans tarder,
Lui demande ce qu'il faut faire.
"C'est, dit-il, afin de m'aider
A recharger ce bois; tu ne tarderas guère."
Le trépas vient tout guérir;
Mais ne bougeons d'où nous sommes:
Plutôt souffrir que mourir,
C'est la devise des hommes.

La Fontaine, L. 1, *Fable* 15.

2. (1) What is the literal translation of *n'en pouvant plus?* (2) To what does *en* refer?

3. State fully the difference between the *Imperfect of the Indicative* and the *Preterite Definite* in French. Give your examples.

4. Translate into French:—*He kissed her hand; you have trod on my toes.* Explain the idiomatical difference between the French and the English in these and similar sentences.

5. Translate into French:—*He wishes me to go home; he wished me to go home.* Explain by what mood and tenses you translate the verb *to go* in those sentences.

6. Write correctly the past participles in the following sentences: Les pluies qu'il y a *eu* cette année ont *gâté* les récoltes. Les peines que m'ont *coûté* ces travaux ont été excessives. C'est une belle chanson, je l'ai *entendu* chanter. Give your reasons for writing them as you do.

7. Give a *résumé* of the 1st act of the *Bougeois Gentilhomme.* Describe the characters in that act.

8. Translate into French:

The officer consented implicitly to all the conditions. The duellists met on the morrow at the hour and place agreed upon; but at the moment when the officer was putting himself on guard, the doctor presented a pistol at him. "What!" said the officer, "have you the design to assassinate me?" "No," said the doctor, "but you must immediately dance a minuet, otherwise you are a dead man." A short altercation followed,

but the doctor appeared so furious and so determined, that the officer was obliged to submit. "Well," said the doctor, "you forced me yesterday to play against my will, and to-day I have forced you to dance against yours. We are even, and I am ready to give you all the satisfaction that you shall ask me."

CHEMISTRY.

THURSDAY, SEPT. 19TH :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. How may Hydrogen Dioxide be prepared? What are its properties?

2. How may the composition of Carbon Dioxide be ascertained? Describe the necessary apparatus.

3. State what you know with regard to the preparation and properties of gaseous Hydrochloric Acid.

4. What volume of Ammonia at 15° C, and 740 mm. could be obtained from 428 grams of Ammonium Chloride?

5. What are compound radicals? Give several examples.

6. Explain the relation existing between the atomic weights and densities of elements in the gaseous state.

7. In what ways are metallic salts formed? Give examples.

8. Describe the Solvay process for the manufacture of Soda-ash.

9. Name the more important salts of Zinc and Lead, and give their properties briefly.

10. Give an outline of the principles of spectrum analysis.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

MONDAY, SEPTEMBER 16TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Euripides, Medea :—

(A) *Μή μοι σύ· πείθειν δῶρα καὶ θεοὺς λόγος·*
χρυσὸς δὲ κρείσσων μυρίων λόγων βροτοῖς.
κείνης ὁ δαίμων, κεῖνα νῦν αὔξει θεός,
νέα τυραννεῖ· τῶν δ' ἐμῶν παίδων φυγὰς
ψυχῆς ἂν ἀλλαξαίμεθ' οὐ χρυσοῦ μόνον.

ἀλλ', ὦ τέκν', εἰσελθόντε πλουσίους δόμους
πατρὸς νέαν γυναῖκα, δεσπότιν δ' ἐμὴν,
ἱκετεύετ' ἐξαιτεῖσθε μὴ φεύγειν χθόνα,
κόσμον διδόντες· τοῦδε γὰρ μάλιστα δεῖ,
ἐς χειρ' ἐκείνην δῶρα δέξασθαι τάδε.
ἰὼ' ὡς τάχιστα· μητρὶ δ' ὢν ἐρᾷ τυχεῖν
εὐάγγελοι γένοισθε πράξαντες καλῶς.

(B) Μὴ δῆτα, θυμὲ, μὴ σύ γ' ἐργάσῃ τάδε·
ἔασον αὐτοὺς, ὦ τάλαν, φεῖσαι τέκνων·
ἐκεῖ μεθ' ἡμῶν ζῶντες εὐφρανοῦσί σε.
μὰ τοὺς παρ' Ἅιδῃ νερτέρους ἀλάστορας,
οὔτοι ποτ' ἔσται τοῦθ' ὑπως ἐχθροῖς ἐγὼ
παῖδας παρήσω τοὺς ἐμοὺς καθυβρίσαι.
[πάντως σφ' ἀνάγκη κατθανεῖν· ἐπεὶ δὲ χρὴ,
ἡμεῖς κτενοῦμεν, οἵπερ ἐξεφυσαμεν.]
πάντως πέπρωται ταῦτα κοὐκ ἐκφεύξεται.
καὶ δὴ 'πὶ κρατὶ στέφανος, ἐν πέπλοισί τε
νύμφη τύραννος ὀλλυται, σάφ' οἶδ' ἐγώ.

2. (*a*) Explain the use of *μοι* in the 1st vs. of ext. (A); of *βροτοῖς* in 2nd; *ψυχῆς* in 5th; and show the construction of *μητρὶ* * * * *καλῶς*. (*b*) Construe *ὦ τάλαν* in ext. (B), and parse and explain *σφ'* in vs. 7 of same ext. (*c*) *οἵπερ ἐξεφύσαμεν*:—explain this use of the *mas. plu.*, and note any peculiarity in the use of the verb.

3. Write short explanatory notes on the following:—(1) *Κυανέας Ξυμπληγάδας*. (2) *κτανεῖν πεισασα Πελιάδας κόρας πατέρα*. (3) *οἵδε παῖδες ἐκ τρόχων* (or *τροχῶν*) *πεπαυμένοι*. (4) *πεσσοὺς προσελθών*. (5) *ἐπ' ἀμφιπύλου*. (6) *ἄκροισι λαίφους κρασπέδοις*. (7) *Πανὸς ὀργάς*. (8) *τὸν γέροντα τύμβον*.

4. What feet are admissible in the Iambic Trimeter? Mark the scanning in the first five lines in extract (A).

5. Translate: Xenophon, Hellenics I:—

(C) *Οἱ δὲ Ἀθηναῖοι ἀνταναγόμενοι ἐναυμάχησαν περὶ Ἄβυδον κατὰ τὴν ἠόνα μέχρι δείλης ἐξ ἑωθινοῦ. καὶ τὰ μὲν νικώντων, τὰ δὲ νικωμένων, Ἀλκιβιάδης ἐπεισπλεῖ δυοῖν δεούσαις εἴκοσι ναυσίν· ἐντεῦθεν δὲ φυγὴ τῶν Πελοποννησίων ἐγένετο πρὸς τὴν Ἄβυδον· καὶ ὁ Φαρνάβαζος παρεβοήθει, καὶ ἐπεισβαίνων τῷ ἵππῳ εἰς τὴν θάλατταν, μέχρι ἐνατὸν ἦν ἐμάχετο, καὶ τοῖς ἄλλοις τοῖς αὐτοῦ ἱππεῦσι καὶ πεζοῖς παρεκελεύετο. Συμφράξαντες δὲ τὰς ναῦς οἱ Πελοποννήσιοι καὶ παραταξαμένοι πρὸς τῇ γῇ ἐμάχοντο. Ἀθηναῖοι δὲ ἀπέπλευσαν, τριάκοντα ναῦς τῶν πολεμίων λαβόντες κενὰς καὶ ἃς αὐτοὶ ἀπώλεσαν κομισάμενοι, εἰς Σηστόν.*

(D) Τοῖς δὲ Συρακοσίοις καὶ Σελινοσίοις κρατίστοις γενομένοις ἀριστεῖα ἔδωκαν καὶ κοινῇ καὶ ἰδίᾳ πολλοῖς, καὶ οἰκεῖν ἀτέλειαν ἔδοσαν τῷ βουλομένῳ ἀεί· Σελινουσίοις δέ, ἐπεὶ ἡ πόλις ἀπωλώλει, καὶ πολιτείαν ἔδοσαν. οἱ δ' Ἀθηναῖοι τοὺς νεκροὺς ὑποσπόνδους ἀπολαβόντες ἀπέπλευσαν εἰς Νότιον κακεῖ θάψαντες αὐτοὺς ἔπλεον ἐπὶ Λέσβου καὶ Ἑλλησπόντου. ὁρμοῦντες δὲ ἐν Μηθύμνῃ τῆς Λέσβου εἶδον παραπλεούσας ἐξ Ἐφέσου τὰς Συρακοσίας ναῦς πέντε καὶ εἴκοσι· καὶ ἐπ' αὐτὰς ἀναχθέντες τέτταρας μὲν ἔλαβον αὐτοῖς ἀνδράσι, τὰς δ' ἄλλας κατεδίωξαν εἰς Ἔφεσον. καί τοὺς μὲν ἄλλους αἰχμαλώτους Θράσυλλος εἰς Ἀθήνας ἀπέπεμψε πάντας.

6. (*a*) In ext. (C):—(1) explain the use of *τὰ μὲν—τὰ δὲ*. (2) the construction of *δυοῖν δεούσαις εἴκοσι ναυσίν*. (3) *τῷ ἵππῳ*, what Dative? (*b*) In ext. (D):—(1) parse *ἀριστεῖα* and supply the ellipsis. (2) *ἀπωλώλει*,—parse and name the *transitive* and *intransitive* tenses of this verb. (3) *ἔλαβον αὐτοῖς ἀνδράσι*,—explain this use of the Dative, and express the phrase in Latin. (4) *ἀπέλυσεν*,—note the quantity of the penultimate.

7. Translate:—(E) Thucydides, Bk. VI., chaps. 57-58.

8. (*a*) Write explanatory notes on the following:—(1) *ἡ ἑορτή*. (2) *ἔξω*—with what is this to be construed? (3) *τῷ κεραμεικῷ καλουμένῳ*. (4) *ὥσπερ εἶχεν*,—supply the ellipsis. (5) *ἔτυπτον καὶ ἀποκτείνυσιν*,—why the change of tense? (6) *ἀγγελθέντος*,—parse and note the peculiarity of syntax. (7) *πρότερον ἢ αἰσθέσθαι* :– some Mss. have *αἰσθεσθαι*:—point out the difference in tense and meaning of these readings and show which is preferable.

8. Translate:—(F) Herodotus, Book VIII., chaps. 54-55.

(For *ἐμπρήσαντα* there is a *var. lect. ἐμπρήσαντι*:—both are correct; but which is the preferable reading, and why?

10. Translate:—(G) Demosthenes, Olynthiac I.—"*ταῦτ' οὖν ἐγνωκότας ὑμᾶς • • • πρότερον πεπόνθατε.*" (page 11, Ed. Tauch.).

11. In ext. (G).—Explain the ellipsis in *τῷ πολέμῳ προσέχειν*. (2) Give the alternate readings for *ἐνῴκειτε*, and *παρῆσαν*. (3) Analyse and construe carefully the sentence *εἰ μὲν γὰρ • • • πεπόνθασιν ἔχειν*. (4) For *ἐκπολεμῶσαι* there is the reading *ἐκπολεμῆσαι*;—show how they differ, and which is preferable, and why?

12. Translate and explain the construction in:—(1) *πόσου τιμᾶται*; (2) *οὐδεὶς ἅπαντα σοφός*. (3) *οἶδα ἀγαθὸς ὤν*. (4) *λαθὼν ἐποίησεν*. (5) *θανάτου αὐτὸν ἐδίωκεν*.

13. Illustrate by short sentences the meanings of *παρά*, *μετα*, and *πρός*, with their various cases.

LATIN.

TUESDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Tacitus, Annals, Book I., chap. 11.

2. (*a*) Turn into *Orat. recta* the clauses "solam * * * laboribus exsecuturos" in ext. (A). (*b*) *Occuleret* :—Why the subjunctive? What mood would be used in Greek? (*c*) Tributa aut vectigalia, et necessitates ac largitiones. Explain.

3. Write short explanatory notes (grammatical) on the meaning of the following :—(*a*) Sullae *dominatio*, Crassi *potentia* (c. 1). (*b*) In Augustum cessere (ib.). (*c*) *Abolendae* magis *infamiae* (3). (*d*) Haec atque talia *agitantibus* gravescere valitudo Augusti (5). (*e*) Ambulantis Tiberi *genua advolveretur* (13). (*f*) *Causam* discordia (27). (*g*) Circumdatae stationes *stratis* (50).

4. Translate :—(B) Pliny, select letters, Ep. 75.

C. PLINIUS CALVISIO SUO S.

Omne hoc tempus inter pugillares ac libellos iucundissima quiete transmisi. 'Quem ad modum' inquis 'in urbe potuisti?' Circenses erant, quo genere spectaculi ne levissime quidem teneor. Nihil novum, nihil varium, nihil quod non semel spectasse sufficiat. Quo magis miror tot milia virorum tam pueriliter identidem cupere currentes equos, insistentes curribus homines videre. Si tamen aut velocitate equorum aut hominum arte traherentur, esset ratio non nulla : nunc favent panno, pannum amant, et si in ipso cursu medioque certamine hic color illuc, ille huc transferatur, studium favorque transibit, et repente agitatores illos, equos illos, quos procul noscitant, quorum clamitant nomina, relinquent. Tanta gratia, tanta auctoritas in una vilissima tunica, mitto apud vulgus, quod vilius tunica, sed apud quosdam graves homines; quos ego cum recordor in re inani frigida adsidua tam insatiabiliter desidere, capio aliquam voluptatem, quod hac voluptate non capior. Ac per hos dies libentissime otium meum in litteris conloco, quos alii otiosissimis occupationibus perdunt. Vale.

5. (*a*) Can you cite any letter of Cicero's which may have suggestsd this? (*b*) Derive and explain pugillares, circenses, favent panno!

6. Translate :—(c) Horace, Epistles, Bk. I., ep. 11., vss. 1-21.

7. In ext. (c). (*a*) *Sardis* :—parse and explain this form : (*b*) *regia* :—with what does this agree? (*c*) *Attalicis* ex *urbibus* :—Explain the historical reference. (*d*) Derive, and explain the following :—Concinna caupona, furnos, incolumi, paenula, campestre, caminus. (*e*) vs. 28 :—Strenua inertia. —What figure of rhetoric?

8. Translate the following, briefly noting any peculiarities, and illustrating from the Greek when you can:—(*a*) Fruges *consumere* nati. (*b*) Reddes *dulce loqui*. (*c*) Scribe *tui gregis*. (*d*) Liber *mihi* non erit unquam. (*e*) Bella *tibi* pugnata dicat. (*f*) Natus moriensque *fefellit* (*g*) Si curas esse quod *audis*. (*h*) Domini *deluxit* febres.

9. Translate (D) Virgil, Georgics, I, vss. 450-468.

10. (*a*) Scan the following vs., noting peculiarities:—
"Glauco et Panopeae et Inoo Melicertae."

(*b*) In 456 account for the quantity of the penult of *fervere*. (*c*) *Immixerier*:—parse and give equivalent later form. Cite other archaic forms used by Virgil. (*d*) Derive and parse the word *Georgicon*, and state to what class of poetry the Georgics belong, and name the Greek writer whom Virgil took as his model in writing them.

11. Translate:—(E) Terence, Adelphi, Act. v., Sc. 1.

12. Parse, and write down the full forms of:—erepsemus, surrexe, rere, submosses, peccaro, siit, operiere, consolere, reprensum, insuerit, cedo, sodes.

GREEK AND LATIN PROSE COMPOSITION.

MONDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

(A) Translate into Greek:—

1. Pythagoras used to say that these two excellent things had been given by the gods to men, speaking truth and doing good. 2. The King hoped that the Athenians would come out against him and not suffer their land to be laid waste. 3. Gelon, after having conquered the Carthaginians at Himera, brought the whole of Sicily under his sway. 4. So long as Pericles was their leader, the Athenians performed many noble achievements. 5. The general happened to be present; had he not, the heavy-armed infantry of the enemy would have entered the town without being discovered. 6. Having said these things they took their departure; when this had been said they took their departure.

(B) Translate into Latin:—

How the Plebeians got their own Magistrates.—At last, in 494, only sixteen years after the driving out of the kings, the plebeians thought that this state of things could not be borne any longer. So they marched out of Rome in a body, and took up a position on a hill a few miles away from the city, and declared that they would found there a new plebeian city, and leave the patricians to live in Rome by themselves. You may imagine

the patricians did not like being left in this way, so they sent to the plebeians a wise man, Menenius Agrippa, to persuade them to come back He told them a fable: "Once upon a time the other members of the body conspired against the belly: they declared that they had all the work to do, while the belly lay quietly in the middle of the body and enjoyed without any labour everything they brought it. So they all struck work, and agreed to starve the belly into subjection. But while they starved the belly, the whole body began to waste away, and the members found that they were becoming weaker themselves. So you plebeians will find that in trying to starve out the patricians you will ruin yourselves." The plebeians thought there was much truth in this, and they agreed to go back on condition that they might have officers of their own to protect them.

ANCIENT HISTORY.

TUESDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the derivation and proper meaning of the term *History*, and name the parts into which History is divided. (*b*) What are the sources of written History as enumerated by Rawlinson? (*c*) What are the cognate sciences with History? Show their importance.

2. Give the dates in Jewish history of (*a*) the Exodus; (*b*) the reign of Saul: (*c*) the Revolt of the Ten Tribes; and (*d*) the Babylonian Captivity, (*e*) State the leading events in the second period of the history of the Jews. Under what King did the nation reach its highest point of power and prosperity? What causes led to its decadence.

3. To what family of the human race did the Carthaginians belong? Give a general account of the national characteristics and political institutions of the Carthaginians. In what ways do you suppose the position and interests of civilized nations in Western Europe would have been affected if Carthage had conquered Rome?

4. Give an account of the accession of Darius I., and of the leading events of his reign. What was the great principle of his policy in regard to the western nations?

5. (*a*) Name the earliest inhabitants of Greece, and give the legendary genealogy of the Hellenes. (*b*) Specify the most noticeable features of early Greek society as represented in the Homeric poems. (*c*) What causes tended to Greek unity? To what may their partial operation and ultimate failure be attributed?

6. What events and causes led to the establishment and overthrow of the supremacy of Athens?

7. When and under what circumstances was Greece reduced into the condition of a Roman Province?

8. Explain the origin and meaning of the phrases:—*Patres Conscripti; Populus Romanus; Quirites; Plebs.*

9. Give an account of the Law of Debt at Rome, and point out how its operation acquired political importance and led to political changes.

10. What was the real character and object of the *Leges Agrariae* at Rome? Define the terms *Ager publicus* and *Possessio.*

11. Trace the most important political events and constitutional changes at Rome, with dates, from the period of the expulsion of the Kings down to the Punic wars.

FRENCH.

THURSDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, LL.D.

1. Faites un résumé du premier acte de la comédie: Les *Femmes Savantes.*

2. Donnez une liste de quatre personnages de cette comédie, et décrivez brièvement chacun de ces personnages.

3. Répondez aux mêmes questions pour la tragédie de *Britannicus.*

4. Traduisez en anglais:—

> *Clintandre.* Jusqu'à sa figure encore la chose alla,
> Et je vis par les vers qu'à la tête il nous jette
> De quel air il fallait que fût fait le poëte;
> Et j'en avais si bien deviné tous les traits,
> Que rencontrant un homme un jour dans le Palais,
> Je gageai que c'était Trissotin en personne;
> Et je vis qu'en effet la gageure était bonne.
>
> *Molière, Les femmes savantes, A. I, sc. III.*

5. Quand doit on mettre *ne* après *prendre garde*, et quand doit-on l'omettre? Donnez deux exemples.

6. Traduisez en français:—

> I desire to speak to you *about* that affair.
> I will go to see you *about* the end of the week.
> He arrived when dinner was *about* over.
> I have no money *about* me.
> It was *about* noon.

7. Quelle faute y a-t-il dans cette phrase: j'irai à la chasse ou pêcher? En quoi consiste la faute?

8. Dans quel siècle vécurent : *Joinville, Allain Chartier, Clément Marot, Malherbe, Montaigne, Boileau?* Qu'est-ce que ces auteurs ont écrit ?

9. Qui est ce qui a écrit *la Métromanie, le Menteur, Mithridate, le Roman de la Rose, le Discours sur la Méthode, le Discours sur l'histoire universelle?*

10. Traduisez en français :—

AVARICE PUNISHED.

A miser who had lost a purse of gold promised a reward of a hundred crowns to any one who would bring him what he had lost. The purse had been found by a poor man, who took it at once to the owner. Having counted the contents, the latter said to him: "I see that you have taken your reward beforehand, for I can only find nine hundred crowns in the purse, whilst there were one thousand in it." The honest man protested his integrity; and as the miser persisted in his subterfuge, they went before the judge, who gave judgment as follows: "You, who have found a purse containing nine hundred crowns, keep it until the person who has lost a bag containing that sum comes forward. As for you, who have lost a thousand crowns, I advise you to wait until you can find the man who has found your bag, which, as you say, contained a thousand crowns, and which is evidently not the bag before us."

ENGLISH LITERATURE.—(*Spalding and the Tempest.*)

WEDNESDAY, 18TH SEPTEMBER :—MORNING, 9 TO 12.

Examiners,.. ..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

(A)

1. Of the following works, give the author's name and the approximate date of publication ; classify or describe each one in the general scheme of literature, and give an outline of any one: Every Man in his Humour, Tamburlaine, The Hind and the Panther, A Tale of a Tub, The Castle of Indolence, She Stoops to Conquer, Christabel, Essays of Elia.

2. What is the principle underlying the unity of action in a drama ? Give a short formula for this unity. On what grounds did the French dramatists res their adoption of the *three* unities ?

3. What is meant by "pastoral" poetry ? Give the names of four well known writers of English pastorals, and name one work of each. Whence came the taste into English Literature, and where is to be sought the origin of pastoral poetry in general ?

4. State (and support your statement) the leading literary features of the poetry written in the reign of Queen Anne. Give quotations, if you can.

5. Justify the assertion made by Caird that "the present age is an age of criticism *par excellence*."

(B)

1. "The action and interest of the plot of the Tempest centre in Prospero." Support or refute this opinion as you think fit.

2. Describe the character of Antonio and of Ferdinand, and illustrate with apposite quotation.

3. Summarise the events in Act II. of the Tempest.

4. Prove the excellence of this play by criticising it on the following points:—

a. Grouping of characters.

b. Concentration and rapidity of action.

c. Elevation of thought and language.

5. Explain briefly: pied ninny, pass of pate, demi-puppets, yarely, chirurgeonly, they'll take *suggestion*, gaberdine, dam, his word is more than *the miraculous harp*, to trash for over-topping.

(SECOND YEAR MATRICULATION AND THIRD YEAR CLASSICAL SCHOLARSHIPS.)

ENGLISH COMPOSITION.

WEDNESDAY, SEPT. 18TH :—AFTERNOON, 2 TO 5.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Give four rules, with examples, for the employment of the comma; and three, with examples, for the use of the semi-colon.

2. Improve the construction of the following :—

a. A very nice day's sport was carried on over an excellent course, all grass, over the land of Mr. H., whose hospitality was unbounded. It consisted of two walls, two bank drops, a water cut, and two hurdles.

b. A modern newspaper-statement, though probably true, would be laughed at, if quoted in a book as testimony; but the letter of a court gossip is thought good historical evidence, if written some centuries ago.

3. Convert the following extract into prose:—

"Well, anyhow, albeit impossible,
Both of them were together jollily
Jaunting it Rome-ward, half-way there by this,
While Guido was left to go and get undrugged,
Gather his wits up, groaningly give thanks
When neighbours crowded round him to condole.

4. Write an essay on one of the following subjects:—

a. Liberty, Equality, Fraternity.

b. Choosing a profession.

c. Scientific discoveries and inventions of the nineteenth century

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ENGLISH LITERATURE.

Milton: *Paradise Lost*, Bks. I. and II.: Trench, *Study of Words*.

FRIDAY, SEPT. 20TH:—AFTERNOON, 2 TO 5.

Examiners,..... { CHAS. E. MOYSE, B.A. / PAUL T. LAFLEUR, M.A.

(Candidates will answer the questions on Trench in the Second Year paper.)

1. What do you learn of Milton's scheme of the Universe from the first two books of Paradise Lost?

2. From passages in the First Book describe Satan and his equipment.

3. Notice arguments in the Council against war, and state by whom they are expressed.

4. Describe Hell-gate and the shapes there, and tell in outline what occurs previous to the interposition of Sin.

5. Give the meaning of the following adjectives, join each adjective to its noun, and say in what connection it occurs: adamantine, orient, night-foundered, afflicted, oblivious, considerate. Use etymology to illustrate the meanings you have given.

6. Where and in what way does Milton use the following in comparison: Ætna, the moon, locusts, Argo, bees?

7. Compare Milton with Homer *or* Dante.

SCIENCE SCHOLARSHIPS.

I. BOTANY.

TUESDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner, ...D. P. PENHALLOW, B.Sc.

1. Explain—with examples—the principal forms of inflorescence and refer each to its proper type.

2. Give a concise explanation of stomata with reference to (*a*) structure, (*b*) function, (*c*) distribution.

3. Give a concise statement of the structure and mode of growth in an exogen, and state how the age of such a plant may be determined.

4. Explain, fully, the distribution, structure, function and duration of root hairs.

5. Give the characteristics of cork tissue; show when and under what circumstances it is produced, and its particular value in the vegetable economy.

6. Give a concise account of the sap of plants as to (*a*) its source, (*b*) direction of movement, (*c*) digestion, (*d*) relation to growth.

7. Give an account of the principal agencies concerned in pollination and show how they are related to close and cross fertilization.

8. Explain the structure of pollen, and show what changes occur when growth takes place.

9. Show what organs are represented in (1) a grain of wheat, (2) an apple, (3) a peach, (4) an orange, and show in what essential respects, these fruits differ.

10. Explain the structure of the pistil in Angiosperms and compare with the Gymnospermous pistil.

II. BOTANY.

TUESDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....D. P. PENHALLOW, B.Sc.

1. Outline the characteristics of Equisetaceæ, Filices, and Lycopodiaceæ; show their relative order in classification, and assign reasons for the same.

2. Compare the a-sexual generation of a moss, a fern, a heterosporous Pteridophyte and a Gymnosperm.

3. Compare the development of the prothallus in the following:
Equisetum, Isœtes, Pinus and a monocotyledonous Angiosperm.

4. Outline the characteristics of Labiatæ, Borraginaceae, Gramineae; cite indigenous representatives of each, and show what economic value is possessed by each order.

5. Give the characteristics of Ericaceae, Ranunculaceae, Sapindaceae; with examples of each.

6. Assign the following to their proper families, and state whether indigenous or introduced:

Chrysanthemum feucanthemum, Ranunculus acris, viola blanda, Berberis vulgaris, Æsculus hippocastanum, Salix alba, Zea mays, Solanum tuberosum, Acer saccharinum Gaylussacia resinosa.

7. Outline the classification of Spermaphytes, and show what characters constitute the basis.

8. Assign to their respective families, and show the economic value and distribution of the following:

Pinus, Carya, Ulmus, Juniperus, Larix, Betula, Populus, Robinia.

Examination of Plants, Thursday, 9 to 12 a.m.

CHEMISTRY.

THURSDAY, SEPT. 19TH :—AFTERNOON, 2 TO 5.

Examiner,..... .....B. J. HARRINGTON, B.A., PH.D.

1. State what you know with regard to the preparation and properties of Carbon Disulphide.

2. What gas is produced when Sodium Acetate and Caustic Soda are heated together? Describe its properties.

3. Give the names and formulæ of the Oxides and Oxy-acids of Phosphorus.

4. Explain the separation of chemical substances by means of dialysis.

5. In what ways are crystals formed? Characterize briefly the six crystallographic systems.

6. Discuss the relations existing between the atomic heats and combining weights of the elements.

7. Give the characteristic reactions of Copper and Mercury Salts.

8. Describe carefully a method for determining the vapour density of a substance, and explain the importance of such determinations.

9. What are Aldehydes? How may Acetaldehyde be obtained, and what are its properties?

10. 0.402 gram of an acid yielded on combustion 1.003 gram of Carbon Dioxide and 0.179 gram of Water. 0.38 gram of its Silver Salt contained 0.1788 gram of Silver. Calculate the empirical formula of the acid.

11. Give a formula for each of the following bodies: Urea, Acetamide, Butyric Acid, Phenol, Aniline, Anthracene.

12. What are Carbohydrates? Into what groups are they divided?

LOGIC.

WEDNESDAY, 18TH SEPTEMBER:—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D.
P. T. LAFLEUR, M.A.

1. Define Name and Term; and give a list of the different kinds or classes of terms, with an example of each.

2. Explain and illustrate the process of logical conversion in all kinds. Give your opinion of the logical value of the Hamiltonian theory regarding the quantification of the Predicate.

3. Assign the symbol of propositional form to each of the following, and give the contradictory:—

a. Things are not what they seem.
b. True wit is nature to advantage drest.
c. Vox populi, vox dei.
d. There's not a joy the world can give
Like that it takes away.

4. What is Reduction? Draw a syllogism in Disamis and reduce it.

5. Supply the missing proposition in the following arguments and test the reasoning formally:—

a. He that spareth the rod hateth his child, hence no loving parent spareth the rod.

b. He who would offer a bribe would take a bribe, therefore no one fit for public office would offer a bribe.

c. The object of war is durable peace; therefore soldiers are the best peace-makers.

6. Explain the nature, and give an illustration, of any one form of Ignoratio Elenchi.

7. Write the canon of the Inductive method of Concomitant Variations, and illustrate its use in an example.

8. What is the true meaning of argument by analogy? Give an instance of its justifiable use, and state the logical value of such an argument.

9. State, briefly but clearly, the distinction between Hypothesis and Theory; illustrate with example.

ANNE MOLSON MATHEMATICAL PRIZE.

(1) GEOMETRY OF THREE DIMENSIONS.

MONDAY, SEPT. 16TH, 1889:—MORNING, 9 TO 12.

Examiner,..... ALEX. JOHNSON, LL.D.

1. The sum of the squares of the reciprocals of any three rectangular diameters of an ellipsoid is constant.

2. Find the length of the axes of the section of a central quadric made by any plane passing through the centre.

3. Find the locus of the middle points of all lines parallel to a fixed plane and terminated by two non-intersecting lines.

4. Find the condition that the general equation of the second degree should represent a surface of revolution.

5. The sections of a quadric by parallel planes are similar to each other.

6. If the polar plane with regard to a quadric of any point A pass through B, then the polar plane of B will pass through A.

7. Find the angle between the two lines

$$\frac{x-a}{l} = \frac{y-b}{m} = \frac{z-c}{n}; \quad \frac{x-a}{l'} = \frac{y-b}{m'} = \frac{z-c}{n'}.$$

8. Find the equations of a line passing through the point $x'y'z'$, and making angles α, β, γ, with the axes.

9. Find the condition that four planes should meet in a point.

10. Find the angle between the two planes

$ax + by + cz + d = 0$ and $a'x + b'y + c'z + d' = 0$.

11. Show that the degree of any equation between the co-ordinates is not altered by transformation of co-ordinates.

12. Investigate formulæ for transforming from one set of oblique axes to another.

(II) CALCULUS.

TUESDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL D.

1. Eliminate the arbitrary function ϕ from the equation

$$V = \phi(v)$$

where V and v are given functions of three variables x, y, and z.

a. Eliminate ϕ from the equation $y - bz = \phi(x - az)$

2. Transform the equation

$$x^2 \frac{d^2y}{dx^2} + 2x \frac{dy}{dx} + \frac{a^2}{x^2} y = 0.$$

into another, where z is the independent variable, being given $x = \frac{1}{z}$.

3. When an invariable plane figure moves in its plane, it can be brought from any one position to any other by a single rotation round a fixed point in its plane.

4. Find the equations of the cycloid referred to its vertex, and show that the length of an arc is given by the equation $S^2 = 8ay$.

5. Find an expression for the radius of curvature in polar co-ordinates, and apply it to find the radius of curvature of the logarithmic spiral $r = a^{\theta}$.

6. Prove that the envelope of the system of lines $\frac{x}{l} + \frac{y}{m} = 1$ where l and m are connected by the equation $\frac{l}{a} + \frac{m}{b} = 1$ is the parabola.

$$\left(\frac{x}{a}\right)^{\frac{1}{2}} + \left(\frac{y}{b}\right)^{\frac{1}{2}} = 1.$$

7. Define products of inertia, and prove that at any point there exists one system of rectangular planes, for which the corresponding products of inertia for any body vanish.

8. If the sides of a triangular lamina be a, b, c, and its mass M, prove that the moment of inertia (I) with respect to the perpendicular to its plane drawn through its centre of gravity is given by

$$I = \frac{M}{3} (a^2 + b^2 + c^2).$$

9. Find the moment of inertia of an elliptic plate with regard to its axes.

10. Find the volume of a given ellipsoid.

11. Find the whole area of the curve.

$$a^2 y^4 = x^4 \ (a^2 - x^2).$$

12. Find the value of $\int_0^{\infty} \frac{dx}{1 + 2x \cos\varphi + x^2}$.

(III.) MECHANICS. (*Anne Molson Prize.*)

THURSDAY, SEPT. 19TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Four equal bars, freely jointed together at their extremities, form a quadrilateral; the opposite vertices are connected by strings in a state of tension; compare the tensions of these strings.

2. Find the centre of gravity of a prism whose base is a given spherical triangle and whose vertex is the centre of the sphere on which the triangle is described.

3. Deduce the volume and surface of a right cone from the theorems of Pappus concerning the centre of gravity.

4. A heavy beam is moveable in a vertical plane round a smooth hinge fixed at one extremity; a heavy sphere is attached to the hinge by a string; the two bodies rest in contact; find the position of equilibrium and the internal reactions, there being no friction between the bodies.

5. A particle is constrained to move in a circle under the influence of a repulsive force, acting from a point on the circumference, and varying as the distance; find the pressure on the curve, the initial position being at the centre of force, and the particle starting from a state of rest.

6. Apply the method of the hodograph to determine the law of force when a particle is moving in an ellipse under the attraction of a force in the focus.

7. For a central orbit prove the equation

$$\frac{d^2u}{d\theta^2} + u = \frac{F}{h^2u^2}$$

8. A particle is attached by a straight elastic string to a centre of repulsive force, the intensity of which varies as the distance; the string is at first at its natural length. Find the greatest distance from the centre of force to which the particle will proceed, and the time the string takes to return to its natural length.

9. If a rigid body be moving round a fixed axis, prove the truth of the equation.

$$\frac{d^2\theta}{dt^2} = \frac{\text{Moment of impressed force}}{\text{Moment of inertia}}$$

10. If two harmonic motions on the same line have equal amplitudes and equal periods, but different epochs, find the amplitude of their resultant.

11. Find the centre of pressure of a triangle with one side in the surface of the fluid in which it is immersed.

12. A hemispherical bowl is filled with water, find the ratio of the whole pressure on the surface of the bowl to the weight of the water.

(IV.) ASTRONOMY. (*Anne Molson Prize.*)

FRIDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.

Examiner.....ALEXANDER JOHNSON, LL.D.

1. Investigate a method for finding the time, magnitude, and duration of a lunar eclipse.

2. Given the geocentric latitude and longitude of a planet and the position, show how to find its heliocentric latitude and longitude and its distance from the sun.

3. Show that the equation of time vanishes four times in the year.

4. Investigate the general differential equation for the refraction of a heavenly body in zenith distance.

5. Find approximately the value of the constant coefficient of aberration.

6. Investigate a method for determining the obliquity of the ecliptic by observations of the sun's declination at the solstices.

7. From the observed R. A. and N. P. D. of an object, show how to find its geocentric longitude and latitude.

8. Find the time of the year when the twilight is shortest.

9. In latitude 52° 12′ 42″ N, in the afternoon, the true altitude of the sun's centre was 39° 5′ 28,″ when its declination was 15° 8′ 10″ N, find the apparent time of observation.

10. The sun's longitude at a certain date was 79° 13′ 1″.8, what was its declination and right ascension, the obliquity of the ecliptic being 23° 27′ 34″ .04.

11. Explain the method of finding the time by equal altitudes of the sun.

12. At a place in north latitude when the sun's declination was 6° 47′ 50″ S, his true altitude was 33° 20′ at 8h 46m a.m., find the latitude.

SESSIONAL EXAMINATIONS,
1890.

FACULTY OF ARTS.

SESSIONAL EXAMINATIONS, 1890.

CLASSICS.

FIRST YEAR.

GREEK.—ODYSSEY, BOOKS XXIII-XXIV.

WEDNESDAY, APRIL 2ND, 1890:—MORNING, 9 TO 12.

Examiner,..... A. J. EATON, PH.D.

1. Translate:—

(A) Τὴν δ' αὖτε προσέειπε περίφρων Πηνελόπεια
„μαῖα φίλη, μήπω μέγ' ἐπεύχεο καγχαλόωσα.
οἶσθα γὰρ ὡς κ' ἀσπαστὸς ἐνὶ μεγάροισι φανείη
πᾶσι, μάλιστα δ' ἐμοί τε καὶ υἱέϊ, τὸν τεκόμεσθα·
ἀλλ' οὐκ ἐσθ' ὅδε μῦθος ἐτήτυμος, ὡς ἀγορεύεις,
ἀλλά τις ἀθανάτων κτεῖνε μνηστῆρας ἀγανοὺς,
ὕβριν ἀγασσάμενος θυμαλγέα καὶ κακὰ ἔργα.
οὔτινα γὰρ τίεσκον ἐπιχθονίων ἀνθρώπων,
οὐ κακὸν οὐδὲ μὲν ἐσθλόν, ὅτις σφέας εἰσαφίκοιτο·
τῷ δι' ἀτασθαλίας ἐπαθον κακόν· αὐτὰρ Ὀδυσσεὺς
ὤλεσε τηλοῦ νόστον Ἀχαιΐδος, ὤλετο δ' αὐτός."

(B) 'κοῦροι ἐμοὶ μνηστῆρες, ἐπεὶ θάνε δῖος Ὀδυσσεύς,
μίμνετ' ἐπειγόμενοι τὸν ἐμὸν γάμον, εἰσόκε φᾶρος
ἐκτελέσω—μή μοι μεταμώνια νήματ' ὄληται
Ἀαέρτῃ ἥρωϊ ταφήϊον, εἰς ὅτε κέν μιν
Μοῖρ' ὀλοὴ καθέλῃσι τανηλεγέος θανάτοιο,
μή τίς μοι κατὰ δῆμον Ἀχαιϊάδων νεμεσήσῃ,
αἴ κεν ἀτερ σπείρου κῆται πολλὰ κτεατίσσας.'
ὡς ἔφαθ' ἡμιν δ' αὖτ' ἐπιπείθετο θυμὸς ἀγήνωρ.
ἔνθα καὶ ἡματίη μὲν ὑφαίνεσκεν μέγαν ἱστὸν,
νύκτας δ' ἀλλύεσκεν, ἐπεὶ δαΐδας παραθεῖτο.

2. State clearly the general principles of Syntax that explain the use of the Optatives in Ext. (A), and the Subjunctives in Ext. (B).

3. Give the Attic form, mood and tense, verb-stem, and principal parts of the following words: (*a*) τεκόμεσθα, (*b*) κτεῖνε, (*c*) ἐπαθον, (*d*) ὤλεσε, (*e*) θάνε, (*f*) ἐκτελέσω, (*g*) ἐπιπείθετο, (*h*) ὑφαίνεσκεν, (*i*) ἀλλύεσκεν.

4. Scan the following lines:—

ἤρξατο δ', ὡς πρῶτον Κίκονας δάμασ', αὐτὰρ ἔπειτα
ἦλθ' ἐς Λωτοφάγων ἀνδρῶν πίειραν ἀρουραν.

Relate Ulysses' adventures among the Cicones and Lotophagi, as given in the ninth book of the Odyssey.

5. What is *synizesis? tmesis?* What is the general rule for the accentuation of oblique cases of nouns? for the accentuation of verbs? Give the contract forms of *τείχεῖ, τιμάομεν, νόε, ἐτίμαε.*

6. Translate:—

Τὸν δ' ἀπαμειβόμενος προσέφη πολύμητις Ὀδυσσεύς·
„οὐλὴν μὲν πρῶτον τήνδε ὁρᾶσαι ὀφθαλμοῖσιν,
τὴν ἐν Παρνησῷ μ' ἔλασεν σὺς λευκῷ ὀδόντι
οἰχόμενον· σὺ δέ με προίεις καὶ πότνια μήτηρ
ἐς πατέρ' Αὐτόλυκον μητρὸς φίλον, ὄφρ' ἂν ἕλοίμην
δῶρα, τὰ δεῦρο μολὼν μοι ὑπέσχετο καὶ κατένευσεν.
εἰ δ' ἄγε τοι καὶ δένδρε' ἐὔκτιμένην κατ' ἀλωὴν
εἴπω, ἃ μοί ποτ' ἔδωκας, ἐγὼ δ' ἤτεόν σε ἕκαστα
παιδνὸς ἐών, κατὰ κῆπον ἐπισπόμενος· διὰ δ' αὐτῶν
ἱκνεύμεσθα, σὺ δ' ὠνόμασας καὶ ἔειπες ἕκαστα.

7. (*a*) In the above passage for translation, is *ὁρᾶσαι* the infinitive? (*b*) Explain the syntax of clause *ὄφρ' ἂν ἕλοίμην*; of the verb *εἴπω*. (*c*) Discuss the form *ἐών*. (*c*) Inflect *ἔδωκας* and *ἤτεον* in the mood and tense in which they here occur. (*d*) Decline *μήτηρ, δῶρον.*

8. Translate (at sight):—

ἐννῆμαρ μὲν ὁμῶς πλέομεν νύκτας τε καὶ ἦμαρ,
τῇ δεκάτῃ δ' ἤδη ἀνεφαίνετο πατρὶς ἄρουρα,
καὶ δὴ πυρπολέοντας[1] ἐλεύσσομεν ἐγγὺς ἐόντες·
ἐνθ' ἐμὲ μὲν γλυκὺς ὕπνος ἐπήλυθε κεκμηῶτα,
αἰεὶ γὰρ πόδα νηὸς ἐνώμων,[2] οὐδέ τῳ ἄλλῳ
δῶχ' ἑτάρων, ἵνα θᾶσσον ἱκοίμεθα πατρίδα γαῖαν
οἱ δ' ἕταροι ἐπέεσσι πρὸς ἀλλήλους ἀγόρευον,
καὶ μ' ἔφασαν χρυσόν τε καὶ ἄργυρον οἴκαδ' ἀγεσθαι,
δῶρα παρ' Αἰόλου, μεγαλήτορος Ἱπποτάδαο.
ὧδε δέ τις εἶπεσκεν ἰδὼν ἐς πλησίον ἄλλον·
„ὦ πόποι, ὡς ὧδε πᾶσι φίλος καὶ τίμιος ἐστὶν
ἀνθρώπας, ὅτεόν τε πόλιν καὶ γαῖαν ἵκηται.

[1] -πολεῖν, *to tend beacon fires.* [2] πόδα νωμᾶν, *to manage the sheets.*

INTERMEDIATE EXAMINATION.

GREEK.—EURIPIDES, MEDEA.

WEDNESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiners..... { REV. GEORGE WEIR, LL.D,
{ A. J. EATON, M.A., PH.D.

1. Translate :—

(A) κἀγὼ μὲν ἀεὶ βασιλέων θυμουμένων
ὀργὰς ἀφήρουν, καί σ' ἐβουλόμην μένειν·
σὺ δ' οὐκ ἀνίεις μωρίας, λέγουσ' ἀεὶ
κακῶς τυράννους· τοιγὰρ ἐκπεσεῖ χθονός.
ὅμως δὲ κἀκ τῶνδ' οὐκ ἀπειρηκὼς φίλοις
ἦκα, τὸ σὸν δὲ προσκοποῦμενος, γύναι,
ὡς μήτ' ἀχρήμων ξὺν τέκνοισιν ἐκπέσῃς
μήτ' ἐνδεής του. πόλλ' ἐφέλκεται φυγὴ
κακὰ ξὺν αὐτῇ· καὶ γὰρ εἰ σύ με στυγεῖς,
οὐκ ἂν δυναίμην σοὶ κακῶς φρονεῖν ποτε.

(B) Ἐρεχθείδαι τὸ παλαιὸν ὄλβιοι,
καὶ θεῶν παῖδες μακάρων, ἱερᾶς
χώρας ἀπορθήτου τ' ἀποφερβόμενοι κλεινοτάταν σοφίαν,
αἰεί διὰ λαμπροτάτου βαίνοντες ἀβρῶς αἰθέρος, ἔνθα ποθ' ἁγνὰς
ἐννέα Πιερίδας Μούσας λέγουσι
ξανθὰν Ἁρμονίαν φυτεῦσαι.
τοῦ καλλινάου τ' ἀπὸ Κηφισοῦ ῥοάς
τὰν Κύπριν κλῄζουσιν ἀφυσσαμέναν
χώραν καταπνεῦσαι μετρίας ἀνέμων [αὔρας].
αἰεὶ δ' ἐπιβαλλομέναν χαίταισιν εὐωδη ῥοδέων πλόκον ἀνθέων
τῇ σοφίᾳ παρέδρους πέμπειν ἔρωτας,
παντοίας ἀρετᾶς ξυνέργους.

(C) ὦ δυστάλαινα τῆς ἐμῆς αὐθαδίας.
ἄλλως ἄρ' ἡμᾶς, ὦ τεκν', ἐξεθρεψάμην,
ἄλλως δ' ἐμόχθουν καὶ κατεξάνθην πόνοις,
στερρὰς ἐνεγκοῦσ' ἐν τόκοις ἀλγηδόνας.
ἦ μήν ποθ' ἡ δύστηνος εἶχον ἐλπίδας
πολλὰς ἐν ἡμῖν γηροβοσκήσειν τ' ἐμὲ
καὶ κατθανοῦσαν χερσὶν εὖ περιστελεῖν,
ζηλωτὸν ἀνθρώποισι· νῦν δ' ὤλωλε δὴ
γλυκεῖα φροντίς. σοῦ γὰρ ἐστερημένη
λυπρὸν διάξω βίοτον ἀλγεινόν τ' ἐμοί.

2. Give the *tense* and *principal parts* of *ἀφῆρουν, ἀνίεις, ἐκπεσεῖ, ἐνεγκοῦσ', περιστελεῖν.* Inflect *δυναίμην* in the tense and mood in which it occurs here, and *ἵημι* in the imperfect active.

3. (*a*) What is the force of the tense in *ἀφῆρουν*? (*b*) Explain the use of the Subjunctive *ἐκπέσῃς.* (*c*) *εἰ σὺ με στυγεῖς, οὐκ ἂν δυναίμην*—remark upon this form of condition.

4. Explain the case of *μωρίας, χθονός, του, αὐθαδίας, ἐμέ, σφῷν, ζηγωτόν* (what two constructions are possible?) *Μούσας, ῥοάς* or *ῥοᾶς, χαιταισιν.* Decline *Ἀργώ* and *θέμις.*

5. (*a*) What euphonic principles account for the following forms: *κἀγώ, κἀκ, ποθ', εἶχον, κατθανοῦσαν, αὐτῇ.* (*b*) Derive (explaining any change of stem): *αὐθαδίας, ἀπορνήτου, γηροβοσκήσειν, παρέδρος, ἀχρήμων, σχῆμα* (cf. Latin *habitus*).

(*c*) *καὶ γάρ* (Ext. A.)—What is the force of the particle *καί*? Distinguish *ὁμῶς* and *ὁμῶς, νῦν* and *νύν, παρά* and *πάρα.*

(*c*) *Ερεχθείδαι*—who are meant? *Πιερίδας*—whence this epithet, and in what does this account of the origin of the muses differ from that generally given?

6. Translate and explain any peculiar construction or form:—

(*a*) *νῦν ἀτιμασας ἔχει.* (*b*) *οὐκ οἶδ' ἂν εἰ πείσαιμι.*

(*c*) *ἀπώλόμεσθ' ἀρ' εἰ κακὸν προσοίσομεν*
νέον παλαιῷ, πρὶν τόδ' ἐξηντληκέναι.

(*d*) *λέγ' εἴ τι βούλει, χειρὶ δ' οὐ ψαύσεις ποτέ.*

(*e*) *δύστανος ἐγὼ μελέα τε πόνων,*
ἰώ μοί μοι, πῶς ἂν ὀλοίμαν;

7. (*a*) Scan the first three lines of Ext. (A). What is this metre called? Write out the scheme. (*b*) In what metre are the lines in 6 (*e*) written? Describe this metre.

[Answer any two of the following form.]

8. State in regard to the Medea, (1) the date when it was first brought out; (2) the scene of the play; (3) the persons of the drama, and (4) an outline of the plot.

9. Enumerate and define the parts of a Greek play.

10. Compare the ancient and modern drama, and the construction and general arrangement of the Greek theatre.

11. Scan the first six lines of Ext. (B), naming and describing the metre.

THIRD YEAR.

GREEK.—ÆSCHYLUS.—PROMETHEUS VINCTUS.

TUESDAY, APRIL 10TH :—MORNING, 9 TO 12.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) καίτοι τί φημί ; πάντα προὐξεπίσταμαι
σκεθρῶς τὰ μέλλοντ', οὐδέ μοι ποταίνιον
πῆμ' οὐδὲν ἥξει. τὴν πεπρωμένην δὲ χρὴ
αἶσαν φέρειν ὡς ῥᾷστα, γιγνώσκοντθ' ὅτι
τὸ τῆς ἀνάγκης ἐστ' ἀδήριτον σθένος.
ἀλλ' οὔτε σιγᾶν οὔτε μὴ σιγᾶν τύχας
οἷόν τέ μοι τάσδ' ἐστί. θνητοῖς γὰρ γέρα
πορὼν ἀνάγκαις ταῖσδ' ἐνέζευγμαι τάλας·
ναρθηκοπλήρωτον δὲ θηρῶμαι πυρὸς
πηγὴν κλοπαίαν, ἣ διδάσκαλος τέχνης
πάσην βροτοῖς πέφηνε καὶ μέγας πόρος.
τοιάσδε ποινὰς ἀμπλακημάτων τίνω,
ὑπαιθρίοις δεσμοῖσι πασσαλευτὸς ὤν.

(B) ΠΡ. ζηλῶ σ' ὀθούνεκ' ἐκτὸς αἰτίας κυρεῖς,
πάντων μετασχὼν καὶ τετολμηκὼς ἐμοί.
καὶ νῦν ἔασον μηδέ σοι μελησάτω.
πάντως γὰρ οὐ πείσεις νιν· οὐ γὰρ εὐπιθής.
πάπταινε δ' αὐτὸς μή τι πημανθῇς ὁδῷ.

ΩΚ. πολλῷ γ' ἀμείνων τοὺς πέλας φρενοῦν ἐφυς
ἢ σαυτόν· ἔργῳ κοὐ λόγῳ τεκμαίρομαι.
ὁρμώμενον δὲ μηδαμῶς ἀντισπάσῃς.
αὐχῶ γὰρ αὐχῶ τήνδε δωρεὰν ἐμοὶ
δώσειν Διΐ, ὥστε τῶνδέ σ' ἐκλῦσαι πόνων.

ΠΡ. τὰ μέν σ' ἐπαινῶ κοὐδαμῇ λήξω ποτέ·
προθυμίας γὰρ οὐδὲν ἐλλείπεις.

(C) ΧΟ. στένω σε τᾶς οὐλομένας τύχας, Προμηθεῦ,
δακρυσίστακτον δ' ἀπ' ὄσσων ῥαδινὸν λειβομένα ῥέος
παρειὰν
νοτίοις ἐτεγξα παγαῖς· ἀμέγαρτα γὰρ τάδε Ζεὺς
ἰδίοις νόμοις κρατύνων ὑπερήφανον θεοῖσι
τοῖσι πάρος δείκνυσιν αἰχμάν.
πρόπασα δ' ἤδη στονόεν λέλακε χώρα,
μεγαλοσχήμονά τ' ἀρχαιοπρεπῆ • • • • στένουσι τὰν σὰν
ξυγομαιμόνων τε τιμάν, ὁπόσοι τ' ἔποικον ἀγνᾶς
Ἀσίας ἕδος νέμονται, μεγαλοστόνοισι σοῖσι
πήμασι συγκάμνουσι θνατοί·

2. Ext. (A) (*a*) Give the derivation of *σκεθρῶς*. (*b*) *ποταίνιον*,—what dialectic variety, and what is the equivalent in Attic? (*c*) *ναρθηκοπλήρωτον*,—comment on the structure and meaning of this word. (*d*) *γέρα*,—parse and give the full form. (*e*) *ἀμπλακημάτων*,—what Genitive?

3. Ext. (B) (*a*) Show the formation of *οὐθούνεκα*. (*b*) *πάντων * * * ἐμοί*,— construe these words. (*c*) *μελησάτω*,—parse and comment on this usage. (*d*) *τὰ μέν σ' ἐπαινῶ*,—what is the import of this phrase? Illustrate it from Horace. (*e*) *προθυμίας οὐδὲν ἐλλείπεις*,—explain the construction.

4. Ext. (C) (*a*) Point out the Doric forms in this extract, and account for their use. Give also their equivalents in Attic. (*b*) *οὐλομένας τύχας*,—what case, and why? Parse *οὐλομένας*. (*c*) *ἀμέγαρτα γὰρ τάδε*,—Hermann and Paley place a colon after *τάδε*;—with what difference of construction and interpretation? (*e*) *αἰχμάν*,—what different meanings? (*f*) *ἔποικον ἀγνᾶς Ἀσίας*,—what is the import of *ἀγνᾶς*, and what the geographical reference?

5. (*a*) Give the correct designation of the metre used in the dialogue of this Drama, and write down the scheme. (*b*) Scan the first four verses of either ext. (A) or (B). (*c*) How were the characters of Prometheus and Io represented?

6. Translate carefully the following extt., adding a note where you think it meet on any grammatical usage, or peculiarity of expression, or various reading:—

(*a*) *τοσοῦτον ἀρκῶ σοι σαφηνίσαι μόνον.* (*b*) *τίνος ἀμπλακίας ποινὰς ὀλέκει*; (*c*) *οὐ ταῦτα ταύτη Μοῖρά πω τελεσφόρος κρᾶναι πέπρωται.* (*d*) *συννοία δὲ δάπτομαι κέαρ ὁρῶν ἐμαυτὸν ὧδε προυσελούμενον.* (*e*) *ἐξ ὀμμάτων δ' ἠστραπτε γοργωπὸν σέλας, ὡς τὴν Διὸς τυραννίδ' ἐκπέρσων βίᾳ.* (*f*) *μή πού τι προῦβης τῶνδε καὶ περαιτερω.*

7. Parse the following verbs:—*ἀφῖξαι, δέρκου, ἐδωρήσω, παρεστώτων, πελῶ, βᾶσαι, ἀχθεσθῇ, σύθην, προσέπτα, ἐπιτεῖλαι, ἐπηύρου, σχεθεῖν, σκεδᾷ*.

8. (*a*) Comment on the forms *σφέ, νίν, σφῶν*. (*b*) Give the composition and meaning of—*νηλής, ἐπαχθῆ, ἀφεγγής, ἄϊστοι, πεδοί, παράορον, ποικιλείμων, μασχαλιστῆρας, εὐωνύμους, ἐπάργεμα.*

9. Distinguish between:—*πέπραγα* and *πέπραχα, πέφηνα* and *πέφαγκα, πέποιθα* and *πέπεικα, ἔβην* and *ἔβησα, ὅλωλα* and *ὀλώλεκα, πολεμέω* and *πολεμόω, ἐπεῖναι, ἐπιέναι* and *ἐφιέναι.*

10. Define, giving instances of:—syncope, crasis, contraction, elision, and synizesis.

B.A. ORDINARY EXAMINATION.

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.

GREEK.— { AESCHINES.—CONTRA CTESIPHONTEM.
{ AESCHYLUS.—PROMETHEUS VINCTUS.

Examiners, ... { REV. GEORGE CORNISH, LL.D.
{ REV. GEORGE WEIR, LL.D.

1. Translate:—

(A) ταῦτα δ' εἰπὼν δίδωσιν ἀναγνῶναι ψήφισμα τῷ γραμματεῖ μακρότερον μὲν τῆς Ἰλιάδος, κενότερον δὲ τῶν λόγων, οὓς εἰωθε λέγειν, καὶ τοῦ βίου, ὃν βεβίωκε, μεστὸν δ' ἐλπίδων οὐκ ἐσομένων καὶ στρατοπέδων οὐδέποτε συλλεγησομένων. ἀπαγαγὼν δ' ὑμᾶς ἀπωθεν ἀπὸ τοῦ κλέμματος καὶ ἀνακρεμάσας ἀπὸ τῶν ἐλπίδων, ἐνταῦθα δὴ συστρέψας γράφει κελεύων ἐλέσθαι πρέβεις εἰς Ἐρέτριαν, οἵτινες δεήσονται τῶν Ἐρετριέων, πάνυ γὰρ ἔδει δεηθῆναι, μηκέτι διδόναι, τὴν σύνταξιν ὑμῖν, τὰ πέντε τάλαντα, ἀλλὰ Καλλίᾳ, καὶ πάλιν ἑτέρους αἱρεῖσθαι εἰς Ὠρεὸν πρὸς τοὺς Ὠρείτας πρέσβεις, οἵτινες δεήσονται τὸν αὐτὸν Ἀθηναίοις φίλον καὶ ἐχθρὸν νομίζειν εἶναι. ἔπειτα ἀναφαίνεται περὶ ἅπαντ' ὢν ἐν τῷ ψηφίσματι πρὸς τῷ κλέμματι, γράψας τὰ πέντε τάλαντα τοὺς πρέσβεις ἀξιοῦν τοὺς Ὠρείτας μὴ ὑμῖν, ἀλλὰ Καλλίᾳ διδόναι. ὅτι δ' ἀληθῆ λέγω, ἀφελὼν τὸν κύμπον καὶ τὰς πριήρεις καὶ τὴν ἀλαζονείαν ἀνάγνωθι καὶ τοῦ κλέμματος ἅψαι, ὃ ὑφείλετο ὁ μιαρὸς καὶ ἀνόσιος ἀνθρωπος, ὃν φησι Κτησιφῶν καὶ ἐν τῷ δε ψηφίσματι διατελεῖν λέγοντα καὶ πράττοντα τὰ ἄριστα τῷ δήμῳ τῶν Ἀθηναίων.

(B) χειροτονηθεὶς γὰρ ὑφ' ὑμῶν πυλαγόρας λαμβάνει δισχιλίας δραχμὰς παρὰ τῶν Ἀμφισσέων ὑπὲρ τοῦ μηδεμίαν μνείαν περὶ αὐτῶν ἐν τοῖς Ἀμφικτύοσι ποιήσασθαι. διωμολογήθη δ' αὐτῷ καὶ εἰς τὸν λοιπὸν χρόνον ἀποσταλήσεσθαι Ἀθήναζε τοῦ ἐνιαυτοῦ ἑκάστου μνᾶς εἴκοσι τῶν ἐξαγίστων καὶ ἐπαράτων χρημάτων ἐφ' ᾧτε βοηθήσειν τοῖς Ἀμφισσεῦσιν Ἀθήνησι κατὰ πάντα τρόπον ὅθεν μᾶλλον ἢ πρότερον συμβέβηκεν αὐτῷ ὅτου ἂν προσάψηται ἀνδρὸς ἰδιώτου ἢ δυνάστου ἢ πόλεως δημοκρατουμένης, τούτων ἑκάστους ἀνιάτοις κακοῖς περιβάλλειν.

(C) καὶ πάλιν ἐν τῷ αὐτῷ ψηφίσματι πολὺ καὶ σαφέστερον καὶ πικρότερον σύγγραμμα γράφει „τὸν ἱερομνήμονα ‘‘ φησι „τῶν Ἀθηναίων καὶ τοὺς πυλαφόρους τοὺς ἀεὶ πυλαγοροῦντας μὴ μετέχειν τοῖς ἐκεῖ συλλεγομένοις μητε λόγων μήτε ἔργων μήτε δογμάτων μήτε πράξεως μηδεμιᾶς.“ τὸ δὲ μὴ μετέχειν τί ἐστι; πότερα τἀληθὲς εἶπω ἢ τὸ ἡδιστον ἀκοῦσαι; τὸ ἀληθὲς ἐρῶ· τὸ γὰρ ἀεὶ πρὸς ἡδονὴν λεγόμενον οὕτωσὶ τὴν πόλιν διατέθεικεν. οὐκ ἐᾷ μεμνῆσθαι τῶν ὅρκων, οὓς ἡμῶν οἱ πρόγονοι ὤμοσαν, οὐδὲ τῆς ἀρᾶς οὐδὲ τῆς τοῦ θεοῦ μαντείας.

(D) ἡ δ' ἡμετέρα πόλις, ἡ κοινὴ καταφυγὴ τῶν Ἑλλήνων, πρὸς ἣν ἀφικνοῦτο πρότερον ἐκ τῆς Ἑλλάδος αἱ πρεσβεῖαι, κατὰ πόλεις ἕκαστοι παρ' ἡμῶν τὴν σωτηρίαν εὑρησόμενοι, νῦν οὐκέτι περὶ τῆς τῶν Ἑλλήνων ἡγεμονίας ἀγωνίζεται, ἀλλ' ἤδη περὶ τοῦ τῆς πατρίδος ἐδάφους. καὶ ταῦθ' ἡμῖν συμβέβηκεν ἐξ ὅτου Δημοσθένης πρὸς τὴν πολιτείαν προσελήλυθεν.

2. Write a short account of the original constitution and functions of the Amphictyonic Council. At what places and how often did it meet?

3. Translate the following extracts:—

(1) *Ἐβουλόμην μὲν οὖν καὶ τὴν βουλὴν καὶ τὰς ἐκκλησίας ὀρθῶς διοικεῖσθαι καὶ τοὺς νόμους ἰσχύειν.* (Explain the force of *ἐβουλόμην*). (2) *ὥσπερ ἂν ὑμῶν ἕκαστος αἰσχυνθείη τὴν τάξιν λιπεῖν ἣν ἂν ταχθῇ ἐν τῷ πολέμῳ.* (Account for the mood of *ταχθῇ*). (3) *Φίλιππος Ἀλόννησον ἐδίδου* (the force of *ἐδίδου*). (4) *τοῦτο πρόδηλον ἦν ἐσόμενον, εἰ μὴ ὑμεῖς κωλύσετε* (Account for the mood of *κωλύσετε*).

4. Write explanatory notes on (1) *εἰσαγγελία*, (2) *ἡ βουλή*, (3) *αἱ ἐκκλήσιαι*, (4) *πρυτανεία*, (5) *τὰς εὐθύνας ὠφληκώς*, (6) *οἱ θεσμοθέται*, (7) *ἐπὶ τῷ θεωρικῷ*.

5. Translate:—

(E) *τὰ λοιπὰ μου κλύουσα θαυμάσει πλέον.*
οἵας τεχνας τε καὶ πόρους ἐμησάμην.
τὸ μὲν μέγιστον, εἰ τις ἐς νόσον πέσοι,
οὐκ ἦν ἀλέξημ' οὐδέν, οὔτε βρώσιμον,
οὐ χριστὸν, οὔτε πιστόν· ἀλλὰ φαρμάκων
χρεία κατεσκέλλοντο, πρίν γ' ἐγὼ σφίσιν
ἔδειξα κράσεις ἡπίων ἀκεσμάτων,
αἷς τὰς ἁπάσας ἐξαμύνονται νόσους.
τρόπους τε πολλοὺς μαντικῆς ἐστοίχισα,
κἄκρινα πρῶτος ἐξ ὀνειράτων ἃ χρὴ
ὕπαρ γενέσθαι, κληδόνας τε δυσκρίτους
ἐγνώρισ' αὐτοῖς· ἐνοδίους τε συμβόλους
γαμψωνύχων τε πτῆσιν οἰωνῶν σκεθρῶς
διώρισ', οἵτινές τε δεξιοὶ φύσιν,
εὐωνύμους τε, καὶ δίαιταν ἥντινα
ἔχουσ' ἕκαστοι, καὶ πρὸς ἀλλήλους τίνες
ἔχθραι τε καὶ στέργηθρα καὶ ξυνεδρίαι·
σπλάγχνων τε λειότητα, καὶ χροιὰν τίνα
ἔχοντ' ἂν εἴη δαίμοσιν πρὸς ἡδονὴν,
χολῆς τε λοβοῦ τε ποικίλην εὐμορίαν.

7. Translate the following extracts, adding an explanatory note where you deem such necessary:—

(1) *ἐπώνυμον δὲ τῶν Διὸς γεννημάτων*
τέξεις κελαινὸν Ἔπαφον· ὃς καρπώσεται
ὅσην πλατύρροος Νεῖλος ἀρδεύει χθόνα·
πέμπτῃ δ' ἀπ' αὐτοῦ γένναι πεντηκοντάπαις
πάλιν πρὸς Ἄργος οὐχ ἑκοῦσ' ἐλεύσεται
θηλύσπορος, φεύγουσα συγγενῆ γάμον
ἀνεψιῶν.

(2) *τοῖον παλαιστὴν νῦν παρασκευάζεται*
ἐπ' αὐτὸς αὐτῷ, δυσμαχώτατον τέρας
ὃς δὴ κεραυνοῦ κρείσσον' εὑρήσει φλόγα,
βροντάς θ' ὑπερβάλλοντα καρτερὸν κτύπον·
θαλασσίαν τε γῆς τινάκτειραν νόσον
τρίαιναν, αἰχμὴν τὴν Ποσειδώνος, σκεδᾷ.
πταίσας δὲ τῷδε πρὸς κακῷ μαθήσεται
ὅσον τό τ' ἄρχειν καὶ τὸ δουλεύειν δίχα.

(3) *ὀχλεῖς μάτην με κὔμ' ὅπως παρηγορῶν.*
εἰσελθέτω σε μήποθ' ὡς ἐγὼ Διὸς
γνώμην φοβηθεὶς θηλύνους γενήσομαι
καὶ λιπαρήσω τὸν μέγα στυγοῦμενον
γυναικομίμοις ὑπτιάσμασιν χερῶν
λῦσαι με δεσμῶν τῶνδε· τοῦ παντὸς δέω.

8. Parse fully the following words from the above extracts :—

(1) *ἀναγνῶναι*, (2) Ἰλιάδος (account for the case), (3) *συλλεγησομένων*, (4) *ἀξιοῖν* (for what contracted), (5) *κάκρινα*, (6) *εἰωμένους* (derivation and origin of its meaning), (7) *ἀφελῶν*, (8) *ξυμφωνήσων* (its composition), (9) *ἐπάργεμα*, (10) *φήσειεν*.

9. (*a*) Express in Latin the import of the following groups of Interrogative particles, severally, and show what answers they require :— (1) *ἦ γάρ, ἆρα*; (2) *ἆρα οὐ*; (3) *μή, ἆρα μή*; (*b*) Express in Greek :— (1) To return a kindness. (2) To feel thankful. (3) To be at a loss what to do. (4) In the reign of Cyrus. (5) We happened to be walking.

FIRST YEAR.—LATIN.

THURSDAY, APRIL 3RD :—MORNING, 9 TO 12.

Examiner ..... A. J. EATON, M.A., PH. D.

(A) CICERO.—SELECTED LETTERS.

1. Render accurately into idiomatic English the following extracts :—

(*a*) Quod te cum Culleone scribis de privilegio locutum, est aliquid, sed multo est melius abrogari : si enim nemo impediet, quid est firmius ? sin erit, qui ferri non sinat, idem senatus consulto intercedet. Nec quicquam aliud opus est abrogari : nam prior lex nos nihil laedebat ; quam si, ut est promulgata, laudare voluissemus aut, ut erat neglegenda, neglegere, nocere omnino nobis non potuisset. Hic mihi primum meum consilium defuit, sed etiam obfuit. Caeci, caeci, inquam, fuimus in vestitu mutando, in

populo rogando, quod, nisi nominatim mecum agi coeptum esset, fieri perniciosum fuit. Sed pergo praeterita; verum tamen ob hanc causam, ut, si quid agetur, legem illam, in qua popularia multa sunt, ne tangatis.

(*b*) De ambitu cum atrocissime ageretur in senatu multos dies, quod ita erant progressi candidati consulares, ut non esset ferendum, in senatu non fui: statui ad nullam medicinam rei publicae sine magno praesidio accedere. Quo die haec scripsi, Drusus erat de praevaricatione a tribunis aerariis absolutus, in summa, quattuor sententiis, cum senatores et equites damnassent. Ego eodem die post meridiem Vatinium eram defensurus: ea res facilis est. Comitia in mensem Septembrem reiecta sunt. Scauri iudicium statim exercebitur, cui nos non deerimus, Συνδείπνους Σοφοκλέους, quamquam a te actam fabellam video esse festive, nullo modo probavi.

2. State clearly the principles of Syntax that explain the following forms: *sinat, nos nihil, quam, voluissemus, coeptum esset, tangatis, ageretur- rei publicae, eram defensurus.*

3. (*a*) Define the meaning of *adfinis, unae litterae, duae litterae, binae litterae, consul designatus, tribuni aerarii.*

(*b*) Give the derivation and meaning of the following words: *ambitus, comitia, candidatus, praevaricatio, privilegium.*

4. Write out in full, and translate the following expressions:—

(*a*) M. Cicero S. D. C. Antonio M. F. IMP. (*b*) pr. Kal. Mai. (*c*) D. a. d III. Non. Oct. (*d*) Diodotus mortuus est; reliquit nobis HS. fortasse centiens.

5. Translate freely, explaining the construction of the words in Italics:

(*a*) Ad primam tibi hoc scribo, me ita dolere, ut non modo a mente non *deserar*, sed id ipsum *doleam*, me tam firma mente ubi *utar* et quibuscum non habere.

(*b*) Ac ne ignores, quid ego in tuis litteris *desiderarim*, scribam aperte, sicut et mea natura et nostra amicitia *postulat*: res eas gessi, quarum aliquam in tuis litteris et nostrae necessitudinis et rei publicae causa gratulationem exspectavi; quam ego abs te praetermissam esse arbitror, quod *vererere* ne cuius animum *offenderes*.

(*c*) Scito enim me, postea quam in urbem *venerim*, redisse cum veteribus amicis, id est cum libris nostris, in gratiam: etsi non idcirco eorum usum dimiseram, quod iis *suscenserem*, sed quod *eorum me subpudebat*.

6. Give a short account of Cicero's early life, education and political preferment.

(B) Latin Prose Composition.

7. Write a note on the following constructions, illustrating by examples from the text of Caesar:

(*a*) Subjunctive after verbs of Fearing.

(*b*) Dative of End or Aim.

(*c*) Clauses of Purpose.

8. Translate into Latin, marking all *long* vowels:

(*b*) At midnight archers and slingers, sent by Caesar under the guidance of the messengers, set out for the town which was beleaguered by the Belgae; and when their approach was seen by the people in the town, the enthusiasm of the latter rose and the hope of the Belgae departed, for now they could not get possession of the town.

(*a*) Iccius, a man of the highest rank and popularity among his own people, had charge of the town. He tried daily by cavalry skirmishes to see how daring his own men were.

9. Translate (at sight):—

Tullius Tironi Suo Sal. Plur. Dic. et Cicero Meus et Frater et Fratris F.

Paulo facilius putavi posse me ferre desiderium tui, sed plane non fero et, quamquam magni ad honorem nostrum interest, quam primum ad urbem, me venire, tamen peccasse mihi videor, qui a te discesserim; sed quia tua voluntas ea videbatur esse, ut prorsus nisi confirmato corpore nolles navigare, adprobavi tuum consilium, neque nunc muto, si tu in eadem es sententia; sin autem postea, quam cibum cepisti, videris tibi posse me consequi tuum consilium est. Marionem ad te eo misi, ut aut tecum ad me quam primum veniret, aut, si tu morarere, statim ad me rediret. Tu autem hoc tibi persuade, si commodo valetudinis tuae fieri possit, nihil me malle quam te esse mecum; si autem intelleges opus esse te Patris convalescendi causa paulum commorari, nihil me malle quam te valere. Si statim navigas, nos Leucade consequere; sin te confirmare vis, et comites et tempestates et navem idoneam ut habeas, diligenter videbis.

FIRST YEAR.

HISTORY OF GREECE AND ROME.

Thursday, April 3rd:—Afternoon, 2 to 5.

Examiner..... A. J. Evans, Ph.D.

1. Describe the general character of Greek mythical traditions and Greek ideas of nature.

2. What were the four Pan-hellenic festivals, and what great purpose did they serve?

3. Describe the social condition of the Athenian people at the time of Solon, the various causes that led to the miseries of that period, and Solon's legislation to remedy these evils.

4. Compare the characters of Themistokles and Aristeides.

5. Relate the story of the battle of Marathon.

6. How was Numa elected king of Rome, and what institutions are ascribed to him?

7. Give an account of the siege of Veii.

8. By whom was Carthage founded, and to what did it owe its rapid growth and importance? What brought on the conflict between Rome and Carthage?

9. What did the Roman franchise comprehend? Describe the Roman colony.

10. Give the geographical position (by map or otherwise), and state (with dates) what occurred at Caudium, Cannae, Syracuse, Zama, Asculum, Pydna, Plataia, Salamis.

INTERMEDIATE EXAMINATION.

LATIN.—HORACE, EPISTLES, BOOK II.

THURSDAY, APRIL 3RD:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE WEIR, LL.D
A. J. EATON, M.A., PH.D.

1. Translate:—

(A) Flore, bono claroque fidelis amice Neroni,
si quis forte velit puerum tibi vendere natum
Tibure vel Gabiis, et tecum sit agat: "Hic, et
candidus et talos a vertice pulcher ad imos,
fiet eritque tuus nummorum milibus octo,
verna ministeriis ad nutus aptus eriles;
litterulis Graecis imbutus, idoneus arti
cuilibet; argilla quidvis imitaberis uda,
quin etiam canet indoctum, sed dulce bibenti.
Multa fidem promissa levant, ubi plenius aequo
laudat venalis, qui volt extrudere, merces.
Res urget me nulla: meo sum pauper in aere.
Nemo hoc mangonum faceret tibi; non temere a me
quivis ferret idem. Semel hic cessavit, et, ut fit,
in scalis latuit, metuens pendentis habenae:"
des nummos, excepta nihil te si fuga laedat;
ille ferat pretium, poenae securus, opinor.
Prudens emisti vitiosum; dicta tibi est lex:
inrequeris tamen hunc et lite moraris iniqua?

(B) Intererit multum, loquatur divusne an heros,
maturusne senex an adhuc florente iuventa
fervidus, et matrona potens an sedula nutrix,
mercatorne vagus cultorne virentis agelli,
Colchus an Assyrius, Thebis nutritus an Argis.
Aut famam sequere, aut sibi convenientia finge.
Scriptor honoratum si forte reponis Achillem,
impiger, iracundus, inexorabilis, acer
iura neget sibi nata, nihil non arroget armis.
Sit Medea ferox invictaque, flebilis Ino,
perfidus Ixion, Io vaga, tristis Orestes.
Si quid inexpertum scenae committis, et audes
personam formare novam, servetur ad imum,
qualis ab incepto processerit, et sibi constet.
Difficile est proprie communia dicere: tuque
rectius Iliacum carmen deducis in actus,
quam si proferres ignota indictaque primus.
Publica materies privati iuris erit, si
non circa vilem patulumque moraberis orbem,
nec verbum verbo curabis reddere fidus
interpres, nec desilies imitator in artum,
unde pedem proferre pudor vetet aut operis lex.

2. (*a*) What circumstances occasioned the Epistle commencing "Flore bono, etc.," and what excuses does Horace give for not sending the promised poem? What application does Horace make of the anecdote related in Ext. (A)? (*b*) Give (1) the connection of Extract (B) with the context (2) the situation of the places and a short account of the classical characters named therein.

3. State carefully the principles of syntax that explain the following forms: (*a*) in regard to mood and tense, *velit, faceret, des* (in what two ways may this be taken?) *loquatur, neget, processerit, proferres, vetet, reponis*; (*b*) in regard to case, *Tibure, arti* (what would be the prose construction?) *indoctum, poenae, Thebis, armis.*

4. Translate and explain the construction of words in italics:

(*a*) Si *dicentis* erunt fortunis absona dicta,
Romani *tollent* equites peditesque cachinnum.

(*b*) Nec sic *incipies*, ut scriptor cyclicus olim:
"Fortunam Priami cantabo et nobile bellum."
Quid dignum tanto feret hic promissor *hiatu?*

(*c*) Interdum vulgus rectum videt, est ubi *peccat.*

(*d*) Liber et ingenuus, praesertim census equestrem
summam nummorum, vitioque remotus ab omni.

(*e*) Ut *pictura*, poesis : erit quae, si propius *stes*
te *capiat* magis, et quaedam, si longius abstes.

(*f*) Scribendi recte *sapere* est et principium et fons.

(*g*) Sed neque parvum
carmen maiestas recipit tua, nec meus audet
rem temptare pudor, quam vires ferre *recusent*.

(*h*) Quintilio si quid *recitares*, "corrige sodes
hoc," *aiebat*, "et hoc."

5. (*a*) Remark upon the meaning of the expressions *equites peditesque*, *scriptor cyclicus* and *census equestrem summam nummorum*. What is the distinction in meaning between *liber* and *ingenuus*? (*b*) Scan, of the above extracts, (*e*), (*f*) and (*g*), marking the position of the caesural pause, and note, in one instance, where the metre helps us to determine the sense. (*c*) Give the principal parts of *tollent*, *incipies*, *stes*, *sapere*, *desilies*, *vetet*.

6. Define clearly the meaning of the following words, giving, where possible, the derivation: *candidus*, *verna*, *pauper*, *arroget*, *personam*, *desilies*, *aedituos*, *sapere*, *temetum*, *trucidet*, *tibicen*, *effutire*, *cyclicus*.

7. (*a*) What are the parts of a conditional sentence? When do such sentences take the Subjunctive mood? What is the difference between such sentences with the present and perfect subjunctive, and with the imperfect and pluperfect subjunctive? (*b*) When is the relative pronoun followed by the Subjunctive mood?

8. (*a*) To whom is the Ars Poetica addressed, and what may be considered its defects as a poem? (*b*) State (according to Horace) what improvements Aeschylus introduced in Tragedy; the duties of the Chorus; and the laws of Iambic verse. (*c*) Give a sketch of the life of Horace, with an enumeration of his works.

INTERMEDIATE EXAMINATION.

LATIN PROSE COMPOSITION.

THURSDAY, APRIL 3RD, 1890:—AFTERNOON 2 TO 5.

Examiners,..... { REV. GEORGE WEIR, LL.D.
A. J. EATON, PH. D.

(A). In the year after the building of Rome 281, Volero, a Roman citizen, who having been a centurion refused to become a common soldier, would have been scourged by the lictor of the consul, had he not implored the assistance of the people, who rose tumultuously and screened him from punishment. On that occasion, the consul found by experience that majesty without strength is by no means safe; for, not to mention that the

lictors were ill-used and the fasces broken, they themselves were struck with stones and driven from the forum into the senate-house, uncertain how far Volero would carry the victory.

(B). Since these facts were confirmed by spies, he commissioned one of his officers to watch proceedings and keep him well informed. This officer wrote that he had not yet completed his investigations ; but he had ascertained that the town was situated in a position, naturally advantageous for defence. [1]The slight eminence on which it lay had on each side sharp declivities, and where, in front, it merged with a gentle slope into the plain, there was a marsh of considerable magnitude. But the king would be able to dispense with storming operations : the fury of the townsmen was such that they would be sure to sally forth to attack him. His troops need only wait under arms till they began the passage over the marsh, and might then take them, on such unfavourable ground, at a great disadvantage.

THIRD YEAR.

LATIN.—LIVY, BOOK XXI.

THURSDAY, APRIL 3RD :—MORNING, 9 TO 12.

Examiner,..... ....REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) Ratem unam ducentos longam pedes, quinquaginta latam, a terra in amnem porrexerunt, quam, ne secunda aqua deferretur, pluribus validis retinaculis parte superiore ripae religatam pontis in modum humo iniecta constraverunt, ut beluae audacter velut per solum ingrederentur. Altera ratis aeque lata, longa pedes centum, ad traiciendum flumen apta, huic copulata est; elephanti per stabilem ratem tamquam viam praegredientibus feminis acti, ubi in minorem adplicatam transgressi sunt, extemplo resolutis, quibus leviter adnexa erat, vinculis, ab actuariis aliquot navibus ad alteram ripam pertrahitur. ita primis expositis alii deinde repetiti ac traiecti sunt. nihil sane trepidabant, donec continenti velut ponte agerentur; primus erat pavor, cum soluta ab ceteris rate in altum raperentur.

(B) Is plura consilio quam vi gerens hospitiis magis regulorum conciliandisque per amicitiam principum novis gentibus quam bello aut armis rem Carthaginiensem auxit. ceterum nihilo ei pax tutior fuit : barbarus eum quidam palam ob iram interfecti ab eo domini obtruncat; conprensusque ab circumstantibus haud alio, quam si evasisset, vultu, tormentis quoque cum laceraretur, eo fuit habitu oris, ut superante laetitia

1. Use *Oratio Obliqua* to the end of this piece.

dolores ridentis etiam speciem praebuerit. Cum hoc Hasdrubale, quia mirae artis in sollicitandis gentibus imperioque suo iungendis fuerat, foedus renovaverat populus Romanus, ut finis utriusque imperii esset amnis Hiberus, Saguntinisque mediis inter imperia duorum populorum libertas servaretur.

(C) Nam neque hostem acriorem bellicosioremque secum congressum nec rem Romanam tam desidem umquam fuisse atque inbellem. Sardos Corsosque et Histros atque Illyrios lacessisse magis quam exercuisse Romana arma, et cum Gallis tumultuatum verius quam belligeratum: Poenum hostem veteranum, trium et viginti annorum militia durissima inter Hispanas gentes semper victorem, duci acerrimo adsuetum, recentem ab excidio opulentissimae urbis Hiberum transire; trahere secum tot excitos Hispanorum populos; conciturum avidas semper armorum Gallicas gentes: cum orbe terrarum bellum gerendum in Italia ac pro moenibus Romanis esse.

2. (*a*). Ext. (A) (1) Ripae;—What case and why? (2) Ab ceteris;—why the plural here. (3) Donec * * agerentur;—write an explanatory note on the use of *donec*. (*b*) Ext. (B) (1) Vultu, oris;—distinguish between these words as to their derivation and meaning. What different interpretations may be given of the clause "ut superante * * * speciem praebuerit?" (*c*) Ext. (C Write, with dates, short explanatory notes on the historical references of this Ext.

3. Parse carefully the following words:—constraverunt, fessis, actae, usui, informes, diffisi, visendos, effusum, fragore, strage, pignoribus, visuri sitis, petissent, munere.

4. Derive and explain the following:—Altaribus, stipendio, praerogativam, vallum, amnis, agmine quadrato, infesto exercitu, protinus, piaculum, provincia, celoces.

5. Write down the *Nom. Sing.* and *Plu.* (if any) of:—pari, muribus, litibus, genu, arcubus, viris, veris, viribus, furem, ditis, edaci, desidis.

6. (*a*) Write out fully the words of which the following are contractions:—regare, regere, dixti, amarunt, amasse, sepelisse, nequistis, amere. (*b*) Write down the *Perfect* (*1st Sing.*), *Supine*, and *Infinitive Passive* of:—aperio, crepo, rapio, peto, minuo, sterno, fleo, salio, tundo, exuo.

7. Turn into Latin:—And he, having set out from Rome, came to Attus Tullius at Antium. Whom, when he had entered his house, the *exile*[1] thus addressed. (He said) that his name was C. Marcius, his *surname*[2] Coriolanus, which reward alone remained to him for such great *services*.[3] That, an exile from Rome, he had *sought refuge*[4] with his enemy. Accordingly, if they wished to employ him, he would deserve well of them;

1. exsul. 2. cognomen. 3. meritum. 4. confugio.

if they wished to *take vengeance on*[5] him, let them *strike*[6] at once, for that he was ready. Then the Volscians determined to *receive*[7] him, because (as they said), since he had *injured*[8] them greatly before, he was able now, having been made their general, *to be of*[9] the greatest *service* to them. And so, having *enrolled*[10] an army, they marched forward to Rome, ravaging only such lands as belonged to the plebeians, and having taken many towns of the Latins, encamped at the *Cluilian ditches*,[11] which were distant five miles from the city.

B.A. ORDINARY EXAMINATION.

THURSDAY, APRIL 3RD:—MORNING, 9 TO 12.

LATIN.— | TACITUS.—ANNALS, BOOK II.
JUVENAL.—SATIRES, VIII. AND XIII.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, LL.D.

1. Translate :—

(A) Nocte coepta egressus augurali per occulta et vigilibus ignara, comite uno, contectus humeros ferina pelle, adit castrorum vias, adsistit tabernaculis, fruiturque fama sui, cum hic nobilitatem ducis, decorem alius, plurimi patientiam, comitatem, per seria per iocos eundem animum laudibus ferrent, reddendamque gratiam in acie faterentur, simul perfidos et ruptores pacis ultioni et gloriae mactandos. inter quae unus hostium, Latinae linguae sciens, acto ad vallum equo, voce magna coniuges et agros et stipendii in dies, donec bellaretur, sestertios centenos, si quis transfugisset, Arminii nomine pollicetur. incendit ea contumelia legionum iras: veniret dies, daretur pugna; sumpturum militem Germanorum agros, tracturum coniuges; accipere omen, et matrimonia ac pecunias hostium praedae destinare. tertia ferme vigilia adsultatum est castris sine coniectu teli, postquam crebras pro munimentis cohortes et nihil remissum sensere.

(B) Post quae rettulit Caesar capiendam virginem in locum Occiae, quae septem et quinquaginta per annos summa sanctimonia Vestalibus sacris praesederat; egitque grates Fonteio Agrippae et Domitio Pollioni, quod offerendo filias de officio in rem publicam certarent. praelata est Pollionis filia, non ob aliud quam quod mater eius in eodem coniugio manebat; nam Agrippa discidio domum imminuerat. et Caesar quamvis posthabitam deciens sestertii dote solatus est.

Saevitiam annonae incusante plebe, statuit frumento pretium, quod emptor penderet, binosque nummos se additurum negotiatoribus in singulos modios. neque tamen ob ea parentis patriae delatum et antea vocabulum

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5. ulciscor. 6. ferio. 7. excipio. 8. noceo. 9. prosum. 10. conscribo. 11. fossae Cluiliae.

adsumpsit, acerbeque increpuit eos, qui divinas occupationes ipsumque dominum dixerant. unde angusta et lubrica oratio sub principe, qui libertatem metuebat, adulationem oderat.

2. (*a*) Ext. (A)—(1) *Augurali;*—Explain. (2) *Ferina pelle;*—How was he probably disguised? (3) "Veniret dies * * praedae destinare:—" Turn this clause into *Oratio recta.* (4) *Matrimonia;*—What characteristic of style is exemplified by this. (5) *Tertia vigilia;*—What part of the night?

3. Ext. (B)—(1) *Capiendam virginem*;—What was the custom here referred to? (2) Give an account of the college of Vestals, stating its functions, and the limit and conditions of service in it. (3) *Decies sestertii;*—Expand and explain this formula. What did the sum amount to either in sterling or in our money?

4. Write short explanatory notes (grammatical) on the following:—(*a*) Ut Germanicum suetis legionibus abstraheret. (*b*) Celerandae victoriae intentior. (*c*) Id quoque vocabulum mutat Mosa flumine. (*d*) Laetus animi. (*e*) Possi de controversiis conloquio transigi. (*f*) Quod si regrederetur obsistente Sentio civile bellum incipi.

5. Comment on the characteristics of the style of Tacitus; and also on his mental and moral qualities.

6. Translate the following extracts, adding a note on any peculiarity of reading or grammatical expression you may deem meet:—

(*a*) Quis fructus, generis tabula jactare capaci
Corvinum, posthac multa contingere virga
Fumosos equitum cum dictatore magistros,
Si coram Lepidis male vivitur? effigies quo
Tot bellatorum, si luditur alea pernox
Ante Numantinos; si dormire incipis ortu
Luciferi, quo signa duces et castra movebant?

(*b*) Hic petit Euphraten juvenis domitique Batavi
Custodes aquilas, armis industrius: at tu
Nil nisi Cecropides truncoque simillimus Hermæ;
Nullo quippe alio vincis discrimine, quam quod
Illi marmoreum caput est, tua vivit imago.

(*c*) Sed quum pervigiles placet instaurare popinas,
Obvius assiduo Syrophœnix udus amomo
Currit, Idumæ ex Syrophœnix incola portæ,
Hospitis affectu dominum regemque salutat.
Et cum venali Cyane succincta lagena.

(*d*) Quæ tam festa dies, ut cesset prodere furem,
Perfidiam, fraudes atque omni ex crimine lucrum
Quæsitum, et partos gladio vel pyxide nummos?
Rari quippe boni: numerus vix est totidem, quot
Thebarum portæ vel divitis ostia Nili.

(*e*) Per solis radios Tarpeiaque fulmina jurat,
Et Martis frameam et Cirrhæi spicula vatis,
Per calamos venatricis pharetramque puellæ
Perque tuum, pater Ægæi Neptune, tridentem:
Addit et Herculeos arcus hastamque Minervæ,
Quidquid habent telorum armamentaria cœli.

(*f*) Tamen ad mores natura recurrit
Damnatos, fixa et mutari nescia. Nam quis
Peccandi finem posuit sibi quando recepit
Ejectum semel attrita de fronte ruborem?
Quisnam hominum est, quem tu contentum videris uno
Flagitio? Dabit in laqueum vestigia noster
Perfidus et nigri patietur carceris uncum,
Aut maris Ægæi rupem scopulosque frequentes
Exsulibus magnis.

7. Write explanatory notes on:—

Nondum aliquis sortitus triste profundi
Imperium, aut Sicula torvus cum conjuge Pluto;
Nec rota, nec Furiæ, nec saxum aut vulturis atri
Pœna: sed infernis hilares sine regibus umbræ.

8. Give the exact meaning and derivation, where you can, of the following:—sportula, alapas, triscurria, hilares, ærugine, arcana, gradivus, vitia, hostia, mobilis. Name derivations in English from any.

9. What is the subject of Juvenal's Satire XIII.? Is it properly speaking a satire?

B.A. ORDINARY EXAMINATION.

FRIDAY, APRIL 18TH:—AFTERNOON, 2 TO 5.

LATIN PROSE COMPOSITION AND HISTORY.

Examiners,..... { REV. GEORGE CORNISH, LL.D
REV. GEORGE WEIR, M.A.

(A) Translate into Latin:—

When Achilles was deliberating with himself whether he should kill Agamemnon, by whom he had been deprived of certain Trojan booty which he thought belonged to himself alone, Pallas, who is said to have been equally a friend to the one as to the other, was asked by Juno, who also befriended both, to descend from heaven, whence they were both looking down, and allay the hero's wrath before his sword was drawn. Achilles, finding himself caught by the hair, turned round, and having recognized Pallas who had not unfrequently appeared to him before, thus spoke:—"I know why you, who delight so much in the infamous Agamemnon, have come hither and assaulted me from behind; but why, proud Pallas, do you who are permitted to use Jupiter's Ægis, whenever you please, endeavour to prevent me from using arms which I can call my own having received from my mother Thetis?"

(B) 1. The causes which led to the decline and fall of the supremacy of, Athens in the affairs of Greece.

2. Write descriptive accounts of (1) the battle of Corinth; (2) of Cindus and (3) of Coronea.

3. Comment on the terms and character of the Peace of Antalcidas.

4. The geography, political and maritime importance of the Chalcidic Peninsula.

(C) 1. (*a*) Name, with dates, the successor of Augustus, and point out the leading events of his reign. (*b*) Write a sketch of Sejanus.

2. Describe briefly the events at Rome of the year 69, A.D.

3. Comment on the law of "Majestas" and on the proceedings of the "Delatores."

4. (*a*) Name the Emperors of the Flavian House. (*b*) What important events occurred in the following years, A.D.:—9, 14, 64, 70, and 79?

B.A. EXAMINATIONS FOR HONOURS IN CLASSICS, 1899.

I.—LATIN PROSE WRITERS.

WEDNESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner, ...REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts into English, adding a brief comment where any peculiar form or construction seems to you to require it:—

(A) Livy, Bk. XXI., chap. 58, down to "militesj iberet."

2. Write explanatory notes on the following:—(1) Ne Latinas indiceret Jovi Latiari solemne sacrum in monte faceret. (2) Ob caltera prodigia libros adire decemviri jussi. (3) Cum jam in orbem pugnarent. (4) Socium nominis Latini. (4) Socii navales. (5) Ad rupem muniendam. (8) Occidente jam sidere Vergiliarum. (9) Quadrato agmine. (10) Cum Gallis tumultuatum.

3. Translate (B) Livy, Bk. XXII., chap. 56.

4. In ext. (B) (1) *Nundinantem;* give the derivation and meaning of this word. What is the reading of the Mss. instead of it? (2) *Cum in hanc sententium pedibus omnes issent;*—explain this, stating what you know generally of the mode of procedure in the Roman Senate. (3) *Ut sacrum anniversarium Ceveris intermissum sit;* when was this festival celebrated? (4) Set forth in as few words as you can the origin and main characteristics of the religious observances of the Romans at this period.

5. (*a*) Give an account of the writings of Livy, stating what have been lost and what have come down to us. (*b*) What authorities had he at command for the history of the Second Punic War? How did he use them?

6. Translate (C) Cicero, de Officiis, Bk. III., chap. 19, from "Fimbriam consularem" to end.

7. (1) Explain the phrases *quicum * * * mices. Sponsionem fecisset.* (2) With what object was this treatise written? What is its subject, and how treated? (3) Write short biographical notes on:—Antipater Stoicus; Chrysippus: Laelius; Zeno. (4) Distinguish between the different schools of Philosophy and Philosophers referred to by Cicero in this treatise.

8. Translate (D) Cicero, De Imp. Cn. Pomp., chap. 12, §§ 34-36.

9. What were the political circumstances in which this oration was delivered?

B.A. HONOURS.

II. LATIN PROSE WRITERS.

WEDNESDAY, APRIL 9TH :—AFTERNOON, 2 TO 5.

Examiner,..... ....REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts into English, adding a brief comment where any peculiar form or construction seems to you to require it :—

(A) Tacitus, Histories, Bk. I., chap. 40.

2. (*a*) *Basilicis* ;—parse, and give derivation and meaning. (*b*) *Lugubri prospectu* :—how do you construe this? (*c*) *Avito Arsacidarum solio* ; —write a short explanatory note on this.

3. Translate, (B) Histories, Chap. 80.

4. (*a*) *E prætorianis* :—Supply the ellipsis. (*b*) *Familiæ Senatorum* :—who were these? Show how Rome in the long run suffered from this class of men. (*c*) Comment on the following :—(1) Falsi Neronis. (2) Plenum exiliis mare. (3) Primores equitum. (4) Clientes libertique. (5) Ubique hasta et sector. (6) Haruspex Umbricius. (7) Sed manipuli quoque et gregarius miles viatica sua et balteos phalerasque, insignia armorum argento decora, loco pecuniæ tradebant instinctu et impetu et avaritiat. (8) Cum ala Petrina.

5. Translate, Annals, Bk. I. (C) Chap. 26 ; and (D) Chap. 62.

6. Write a short account of the defeat of Varus, giving the date, and also the date of the events referred to in Ext. (D). What was the fate of Arminius? What was Tacitus' estimate of his character.

7. Translate the following extracts from Annals, Bk. II., adding an explanatory note where you see fit :—

(*a*) Nam Phraates quamquam depulisset exercitus ducesque Romanos, cuncta venerantium officia ad Augustum verterat partemque prolis firmandae amicitiae miserat, haud perinde nostri metu quam fidei popularium diffisus.

(*b*) Accendebat dedignantes et ipse diversus a maiorum institutis, raro venatu, segni equorum cura ; quotiens per urbes incederet, lecticae gestamine fastuque erga patrias epulas. inridebantur et Graeci comites ac vilissima utensilium anulo clausa. sed prompti aditus, obvia comitas, ignotae Parthis virtutes, nova vitia ; et quia ipsorum moribus aliena, perinde odium pravis et honestis

(*c*) Postremo deligunt locum flumine et silvis clausum, arta intus planitie et umida: silvas quoque profunda palus ambibat, nisi quod latus unum Angrivarii lato aggere extulerant, quo a Cheruscis dirimerentur. hic pedes adstitit: equitem propinquis lucis texere, ut ingressis silvam legionibus a tergo foret.

(*d*) Distinctos senatus et equitum census, non quia diversi natura, sed ut, sicut locis ordinibus dignationibus antistent, ita iis quae ad requiem animi aut salubritatem corporum parentur, nisi forte clarissimo cuique plures curas, maiora pericula subeunda, delenimentis curarum et periculorum carendum esse. facilem adsensum Gallo sub nominibus honestis confessio vitiorum et similitudo audientium dedit. adiecerat et Tiberius non id tempus censurae nec, si quid in moribus labaret, defuturum corrigendi auctorem.

(*e*) Contra veterani ordinibus ac subsidiis instructi; hinc militum, inde locorum asperitas: sed non animus, non spes, ne tela quidem nisi agrestia aut ad subitum usum properata. ut venere in manus, non ultra dubitatum, quam dum Romanae cohortes in aequum eniterentur: vertunt terga Cilices, seque castello claudunt.

(*f*) Classem quippe et avia Oceani quaesita, ne quis venientibus occurreret, ne pulsos premeret: sed ubi miscuerint manus, inane victis ventorum remorumve subsidium. meminissent modo avaritiae, crudelitatis, superbiae: aliud sibi reliquum quam tenere libertatem aut mori ante servitium?

8. Translate:—

Favorinus philosophus adulescenti, veterum verborum cupidissimo et plerasque voces nimis priscas et ignotas in cotidianis sermonibus expromenti, "Curius" inquit "et Fabricius et Coruncanius, antiquissimi viri, et his antiquiores Horatii illi trigemini plane ac dilucide cum suis locuti sunt, neque Auruncorum aut Sicanorum aut Pelasgorum, qui primi coluisse Italiam dicuntur, sed aetatis suae verbis usi sunt; tu autem, proinde quasi cum matre Euandri nunc loquare, sermone abhinc multis annis iam desito uteris, quod neminem vis scire atque intellegere quae dicas. Nonne, homo inepte, ut quod vis abunde consequaris, taces? Sed antiquitatem tibi placere ais, quod honesta et bona et sobria et modesta sit. Vive ergo moribus praeteritis, loquere verbis praesentibus: atque id, quod a C. Caesare scriptum est, habe semper in memoriâ atque in pectore, ut tamquam scopulum sic fugias insolens verbum."

B.A. HONOURS.

III.—LATIN POETS.

FRIDAY, APRIL 11TH:—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate (adding an explanatory note where you may deem it necessary on any peculiar form or construction in any of the extt.):—

(A) Horace, Satires, Book I., Sat. iv., vss. 34–56.

2. With what object was this satire written? Trace the connection between the Old Comedy and Satire.

3. Translate (*b*) the following extt. from the Epistles, adding an explanatory note where you deem it proper:—

(*a*) Si curatus inaequali tonsore capillos
Occurro, rides: si forte subucula pexae
Trita subest tunicae, vel si toga dissidet impar
Rides. Quid, mea quum pugnat sententia secum;
Quod petiit spernit; repetit quod nuper omisit;
Aestuat et vitae disconvenit ordine toto;
Diruit, aedificat, mutat quadrata rotundis
Insanire putas solennia me neque rides.

(*b*) Debes hoc etiam rescribere, si tibi curae,
Quantae conveniat, Munatius; an male sarta
Gratia nequidquam coit et rescinditur? At, vos
Seu calidus sanguis seu rerum inscitia vexat
Indomita cervice feros, ubicunque locorum
Vivitis, indigni fraternum rumpere foedus,
Pascitur in vestrum reditum votiva juvenca.

(*c*) Non ego ventosae plebis suffragia venor
Impensis cenarum et tritae munere vestis;
Non ego, nobilium scriptorum auditor et ultor,
Grammaticas ambire tribus et pulpita dignor:
Hinc illae lacrimae! Spissis indigna theatris
Scripta pudet recitare, et nugis addere pondus.

(*d*) Qui semel adspexit, quantum dimissa petitis
Praestent, mature redeat repetatque relicta.
Metiri se quemque suo modulo ac pede verum est.

4. (*a*) Compare the *Satires* with the *Epistles* of Horace. (*b*) How do they stand related to each other in respect of dates of publication?

5. Translate, Juvenal, Sat. viii., vss. 269-275.

6. Write short explanatory notes as to derivation or meaning, or both, of the following from Satire viii. (*a*) Legum prima securis. (*b*) Multa contingere virga. (*c*) Generosum. (*d*) Nanum. (*e*) Epiredia. (*f*) Sensus communis. (*g*) Per conventus. (*h*) Ergastula. (*i*) Mirmillonis.

7. Translate (C) Sat. x., vss. 23-40.

8. Explain the social or political references in :—(*a*) Quos sportula fecit amicos. (*b*) Genua incerare deorum. (*c*) Sejanus ducitur unco. (*d*) Verbosa et grandis epistola venit a Capraeis. (*e*) Egregios equites. (*f*) Quinquatribus. (*g*) Jam dextra computat annos.

9. Translate, noting various readings or interpretations :—

(*a*) Verterit hunc dominus, momento turbinis exit
Marcus Dama. Papæ ! Marco spondente recusas
Credere tu nummos ? Marco sub judice palles ?
Marcus dixit, ita est : assigna, Marce, tabellas.
"Hæc mera libertas ! hoc nobis pilea donant !
An quisquam est alius liber, nisi ducere vitam
Cui licet, ut voluit ? licet ut volo vivere : non sum
Liberior Bruto ?"

(*b*) Disce, sed ira cadat naso rugosaque sanna,
Dum veteres avias tibi de pulmone revello.
Non prætoris erat stultis dare tenuia rerum
Officia, atque usum rapidæ permittere vitæ.
Sambucam citius caloni aptaveris alto.

(*c*) Nunc et de cespite vivo
Frange aliquid, largire inopi, ne pictus oberret
Cærulea in tabula.—Sed cœnam funeris heres
Negliget iratus, quod rem curtaveris ; urnæ
Ossa inodora dabit, seu spirent cinnama surdum,
Seu ceraso peccent casiæ, nescire paratus.
Tune bona incolumis minuas ? Et Bestius urget
Doctores Graios : "Ita fit, postquam sapere urbi
Cum pipere et palmis venit nostrum hoc maris expers,
Fœnisecæ crasso vitiarunt unguine pultes."

(*d*) Hæc miscere nefas ; nec, quum sis cetera fossor,
Tres tantum ad numeros satyrum moveare Bathylli.
"Liber ego." Unde datum hoc sumis, tot subdite rebus ?
An dominum ignoras, nisi quem vindicta relaxat ?
I puer, et strigiles Crispini ad balnea defer,
Si increpuit, cessas nugator ? servitium acre
Te nihil impellit, nec quicquam extrinsecus intrat,
Quod nervos agitet : sed si intus et in jecore ægro
Nascuntur domini, qui tu impunitior exis
Atque hic quem ad strigiles scutica et metus egit herilis ?

10. Comment on the relative excellences and peculiarities of style of Horace, Juvenal and Persius. Whom did each take as his model ?

B.A. HONOURS.

IV.—LATIN POETS.

MONDAY, APRIL 14TH :—MORNING, 9 TO 12.

Examiner,..... ..... REV. GEORGE CORNISH, LL.D

1. Translate (adding an explanatory note where you may deem it necessary on any peculiar form or construction in any of the extt.):—

(A) EU. Exi, inquam ! age, exi ! exeundum hercle tibi hinc est foras,
circumspectatrix cum oculis emissiciis !
STA. Nam cur me miseram verberas? EU. Ut misera sis,
atque ut te dignam mala malam aetatem exigas.
STA. Nam qua me nunc causa extrusisti ex aedibus ?
EU. Tibi egon rationem reddam, stimulorum seges ?
Illuc regredere ab ostio : illuc : sis vide, ut
incedit. At scin', quomodo tibi res se habet ?
Si hercle hodie fustem cepero aut stimulum in manum,
testudineum istum tibi ego grandibo gradum.
STA. Utinam me divi adaxint ad suspendium,
potius quidem, quam hoc pacto apud te serviam.

2. (*a*) Write down the name and scheme of the metre used in the above ext., and show in what respects it differs from the corresponding metre used in Greek Tragedy. (*b*) Scan the first five vss. (*c*) Explain the formation of:—foras, emissiciis, extrusisti, sis, scin, grandibo, adaxint, respexis, faxim.

3. Translate :—(B) Nam, meo quidem animo, si idem faciant ceteri
opulentiores pauperiorum filias
ut indotatas ducant uxores domum :
et multo fiat civitas concordior
et invidia nos minore utamur quam metuont magis ;
et illae malam rem metuant quam utimur:
et nos minore sumtu simus quam sumus.
In maxumam illuc populi partemst optumum :
in pauciores avidos altercatiost,
quorum animis avidis atque insatietatibus
neque lex neque tutor capere est qui possit modum

4. Explain the following words, both as to meaning and derivation :—Salutigerulos, aurifex, ciniflones, patagiarii, flammearii, propolæ, manu learii, phylacistæ, bellum, edepol, mecastor, secus.

5. Translate :—(C) Terence, Adelphi, Act IV., Sc. 1.

(*a*) Ext. (C)—(1) Supply the ellipses with :—utinam quidem ; nihilne in mentem? tanto nequior ; hem tibi autem ; nusquam tu me. (2) Fervit :—

Explain the conjugation. (3) Quam ovem :—Why the Accus.? (4) Potin ut desinas;—Explain the construction. (*b*) Write short notes on :—(1) Lupus in fabula. (2) Locum reprehensum. (3) Liberali illam assero causa manu. (4) Injeci scrupulum homini. (5) Patrissas. (6) Silicernium. (7) Mastigia. (8) Non posteriores faciam.

6. Translate the following, with explanatory notes on the parts in italics :—

Graeca Menandrv acta *Lvdis Funeralibvs* Lvcio Aemilio Pavlo Qvos *Fecere* Q. Fabivs Maxvmvs P. Cornelivs Africanvs. *Egere* L. Atilivs Praen. L. Ambivivs Tvrpio. *Modos Fecit* Flaccvs Clavdi *Tibiis Serranis*. Tota Facta Sexta M. Cornelio Cethego L. Gallo Cos.

7. (*a*) Give examples of archaic forms used by Plautus and Terence. (*b*) What peculiar constructions are found with the verbs *utor*, *fungor*, and *potior*? (*c*) Write down the full forms of the following :—*dis*, *produxe*, *exporge*, *sursum*, *lautum*.

9. Translate (D) Virgil, Aen., II.—vss. 469-482. (E) Bk. III. vss. 641-650 (F) Bk. IV., vss. 441-449.

10. (*a*) What was the purpose of Virgil in writing the Æneid? (*b*) How does he work it out? (*c*) What would you note as the prominent characteristics of his poetry and of his style?

B.A. HONOURS.

V. GREEK PROSE WRITERS.

Tuesday, April 15th :—Morning, 9 to 12.

Examiner.....Rev. George Cornish, LL.D.

1. Translate, adding an explanatory note where you deem it necessary :—

(A) Demosthenes, De Corona, page 299 (Ed. Tauchnitz).

σὺ δ' ὁ σεμνὸς ἀνὴρ down to *τὴν αὑτοῦ τέχνην*.

2. (*a*) Comment on the character of the rites referred to in this extract. (*b*) Explain the words *κρατηρίζων*, *ὀλολύξαι*, *ἰτέας*, *ὄρεις τοὺς παρείας θλίβων*, *κιστοφόρος καὶ λικνοφόρος*, *Μυσῶν λείαν*, *κάθαρμα*, *χοίνικας*, *Ἐμπουσαν*, illustrating from other writers. (*c*) Point out passages in this oration that were held in admiration by the ancients.

3. Translate (B) Æschines contra Ctesiphontem §§ 206-207 (Ed. Teubner).

4. (*a*) Explain the metaphors of ext. (B). (*b*) Write short critical notes on the following from §§ 168-170:—*δημοτικος, εὐφημίαν, φαῦλον ἐλεύθερον ἀτυχίαν, εὐεργεσίαν, ἀσέλγειαν, παιδείαν, εὐγνώμον.*

5. What were the strong characteristics of the oratorical style of these two orators, severally, and how are they exemplified in these orations?

6. Translate (C), Plato, De Republica, Bk. II., chap. 4,—*πρῶτον μὲν οὖν* down to end of the chapter.

7. (*a*) *παρασκεύην φίλων*:—Cite and illustrate from Æschines. (*b*) *ἁπλοῦν*,—derive this word and turn it into Latin. (*c*) *κατ' Αἰσχυλον*,—Give the reference. (*d*) *βεβασανισμένος*,—derive the word and explain the metaphor.

8. Explain the following from Bk. I. (*a*) *διασωζοντες τὴν παλαιὰν παροιμίαν.* (ch. 3 A.) (*b*) *προπηλακίσεις* (ib.). (*c*) *ὁμώνυμος ἐμοί* (4 B). (*d*) *πρὸς τὰ συμβόλαια, κοινωνήματα, εἰς πεττῶν θέσιν, τὴν μουσικήν* (7 A, B, D.) (*e*) *στρέψας ἑαυτόν.* (10 B.) (*f*) *ἀνεκάγχασε μάλα σαρδάνιον, εἰρωνεία* (11 A.) *ξυρεῖν λέοντα.* (15 C.) Give the English Proverb.

9. Translate (D), Aristotle, De Poetica, chap. 18:—*χρὴ δὲ ὑπερ εἴρηται* to end.

10. (*a*) Note *var. lectt.* and emendations suggested in this chap. (*b*) Describe the condition of the Text of this Treatise. How may it be accounted for? (*c*) Derive and define the following terms:—*προβλήματα, λύσεις, ἐποποικὴ, διηγηματικὴ, παραλογισμός, μεταφορὰ, πτῶσις, στοιχεῖον, σύνδεσμος ῥῆμα. ἐστι δὲ πάσης τραγῳδίας τὸ μὲν δέσις τὸ δὲ λύσις.*

11. Translate (E):—*Δημοσθένει τοίνυν τῷ ῥήτορι πατὴρ ἦν Δημοσθένης, ἀνεπίληπτος τῷ γένει δοκῶν, ὡς καὶ Αἰσχίνης ἐχθρὸς ὢν μαρτυρεῖ· εἴρηται γοῦν οὑτως αὐτοῖς ῥήμασι ,,τούτῳ πατὴρ μὲν ἦν Δημοσθένης ὁ Παιανιεύς, ἀνὴρ ἐλεύθερος· οὐ γὰρ δεῖ ψεύσασθαι''· ἐργαστήριον δὲ οἰκετῶν μαχαιροποιῶν κεκτημένος, ἐντεῦθεν τὴν τοῦ μαχαιροποιοῦ κλῆσιν ἔλαβε. τὸ μέντοι μητρῷον γένος τοῦ ῥήτορος οὐκ ἦν, ὥς φασι, καθαρῶς Ἀττικόν, Γύλωνος τοῦ πάππου τοῦ Δημοσθένους φυγόντος μὲν ἐξ Ἀθηνῶν ἐπὶ προδοσίας ἐγκλήματι, οἰκήσαντος δὲ περὶ τὸν Πόντον, κἀκεῖ γυναῖκα ἀγαγομένου Σκύθιν τὸ γένος, ἐξ ἧς ἦν τοῦ Δημοσθένους ἡ μήτηρ Κλεοβούλη. εἰς τοῦτο γοῦν ἄλλοι τε λελοιδορήκασι, καὶ Αἰσχίνης, εἰπὼν ὡς ἄρα εἴη Σκύθης, βάρβαρος, ἑλληνίζων τῇ φωνῇ. περὶ μὲν οὖν τοῦ γένους αὐτοῦ τοσαῦτα εἰρήσθω·*

B.A. HONOURS.

VI. GREEK PROSE WRITERS.

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate (adding an explanatory note where you deem it necessary in any of the extt. given below):—

(A) Thucydides, Book VI., chap. 80.

2. Ext. (A). (*a*) Supply the ellipsis with *ἀνδρώους ὄντας* and *ἰέναι*, severally, and show the construction. (*b*) *προμηθίαι*—*προθυμίαν*:—Distinguish between these readings. (*c*) *βοηθεῖν*,—construe. (*d*) *οἰκ ἄλλον τινα ἀθλον*,—note the solecism. (*e*) *κἂν*,—what does the particle here qualify? (*f*) *μὴ ἂν γενομένην*,—why not *οὐ*?

3. Translate (B), Thucydides, Bk. VII, chap. 41.

4. *αἱ κεφαλαὶ . . . ὁ ξυνετώτατον*:—explain the construction and use of these. Explain also in chap. 40,—*ἐς τοὺς ταρσοὺς ὑποπίπτοντες. ἐς τὰ πλάγια παραπλέοντες.* In ch. 36,—*τὰς ἐπωτίδας.* 1b. *ταῖς ἐμβολαῖς*—*τοῖς ἐμβόλοις.* So in 40,—*ἐμβόλων*–*ἐμβολῶν*,—variant:—what is the difference in meaning?

5. Translate (C), Herodotus, Bk. IX., chap. 82. Distinguish between the readings *κατασκευὴν*,—*παρασκευήν*, *ἀρτοκόπους*—*ἀρτοποιούς*.

6. Translate (D) Herod., Bk. VIII., chap. 14. (*a*) Explain the geographical ref. in *τὰ Κοῖλα τῆς Εὐβοίης*. (*b*) Note the leading dialectic peculiarities of Herodotus, and parse, giving the Attic equivalents, the following forms of verbs:—*ἔσεαι, ἐγένευ, ἐπίσταυ, ἀπικέατο, ὥρμεατο, δυναίατο, ἀπίκατο, ἀπιέωσι, ἐτράπεν, ἐτετάχατο.*

7. Translate (E), Xenophon, Hellenics, Bk. II., chap. iii, §§ 32-34, inclusive.

8. (*a*) Translate, Bk. I., chap. vii., § 12. Wherein did the *παράνομα* consist. (*b*) *ἐγενετο Ἀπατούρια*:—explain. (*c*) *ἐθυε τὰ εὐαγγέλια*:—(6, 37):—Translate, and parse *εὐαγγέλια*. (*d*) *ὡς πρὸς διέκπλουν καὶ περίπλουν παρασκευασμένας*:—explain the manœuvres here referred to. (*e*) *ὡς ἕκαστος ἠνοιξεν* (5, 10):— explain, citing other passages where he has used this verb.

9. Give the geographical position of:—Rhœteum, Madytus, Clazomenae, Cyzicus, Perinthios, Chrysopolis, Coresus, Notium, Coryphasium, Gytheum, Malea. Give modern names where you can.

10. Translate :—

(A) *Ἀμαξόνες γὰρ Ἄρεως μὲν τὸ παλαιὸν ἦσαν θυγατέρες, οἰκοῦσαι δὲ παρὰ τὸν Θερμώδοντα ποταμόν, μόναι μὲν ὡπλισμέναι σιδήρῳ τῶν περὶ αὐτὰς, πρῶται δὲ τῶν πάντων ἐφ' ἵππους ἀναβᾶσαι, οἷς ἀνελπίστως δ' ἀπειρίαν τῶν ἐναντίων ἦρουν μὲν τοὺς φεύγοντας, ἀπέλειπον δὲ τοὺς διώκοντας ἐνομίζοντο δὲ διὰ τὴν εὐψυχίαν μᾶλλον ἀνδρες ἢ διὰ τὴν φύσιν γυναῖκες· πλέον γὰρ ἐδόκουν τῶν ἀνδρῶν ταῖς ψυχαῖς διαφέρειν ἢ ταῖς ἰδέαις ἐλλείπειν. ἀρχουσαι δὲ πολλῶν ἐθνῶν, καὶ ἔργῳ μὲν τοὺς περὶ αὐτὰς καταδεδουλωμέναι, λόγῳ δέ περὶ τῆσδε τῆς χώρας ἀκούουσαι κλεος μέγα, πολλῆς δόξης καὶ μεγαλης ἐλπίδοχάριν παραλαβοῦσαι τὰ μαχιμώτατα τῶν ἐθνῶν ἐστράτευσαι ἐπὶ τήνδε τὴς πόλιν.*

B.A. HONOURS.

VII. GREEK POETS.

MONDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate (with an explanatory note where you deem it necessary in any of the extracts) :

(A) Æschylus, Prometheus Vinctus, vss. 726-747.

2. Extract (A) (*a*) Note various readings in this passage. (*b*) Comment on the geographical references, mythological or other. (*c*) Sketch, so far as they can be traced, the wanderings of Io, and show her connection with the main action of the Drama.

3. Translate, (B) Æschylus, Septem contra Thebas, vss. 452-471.

4. (*a*) Scan vss. 452-456; (*b*) Comment on: (1) *τρίτῳ * * * τρίτος*, illustrating the rhetorical usage from the Antigone. (2) *ἐν ἀμπυκτηρσιν.* (3) *φιμοί.* (4) *μυκτηροκόμποις.* (5) *τὸν φερέγγυον.*

4. Give the meaning of the following epithets :—*Ἑβδομαγέτης, Ἀλεξητήριος, χρυσοπήληξ, Λύκειος, Ὄγκα, Σπαρτῶν, Νήίσταισι, Ὁμολωίσιν, Χάλυβος.*

5. Explain the meaning and the allusions in the following :—(*a*) *μελάγκροκον ναύστολον θεωρίδα, τὰν ἀστιβῆ Πόλλωνι.* (*b*) *ἀρὰς ἐπικότους τροφᾶς.* (*c*) *πληροῦτε θωρακεῖα καπὶ σέλμασιν πύργων στάθητε.* (*d*) *τὸι ἐξηβον χρόνῳ.* (*e*) *καηπλεύσειν μάχην.*

6. Translate (C), Sophocles, Antigone :—(*a*) vss. 1261-1269. (Name the metre here used, and define the term *κομμος*). (*b*) vss. 1183-

1188. (Construe λόγων, θεᾶς, εὐγμάτων). (*c*) vss. 1077-1079. (What is the subject of φανεῖ?) (*d*) vss. 735-745. (Show the proper construction of χρὴ in 736, and explain the usage of 742. (*e*) vss. 582-592. (What is the subject of this second stasimon, and how is it in striking contrast to that of the first stasimon? Note the geographical reference). (*f*) vss. 365-375. (Note variants in 369). (*g*) vss. 223-36. (Comment on the character of the φύλαξ.)

7. Translate (D), Euripides, Medea :—(*a*) vss. 1148-1150. (Explain the idiom οὐ μὴ δυσμενὴς ἐσεῖ φίλοις. (*b*) vss. 820-830. (What is the subject of φυτεῦσαι?) (*c*) vss. 688-705. (ἄτιμοι ἐσμὲν * * * φίλοι :— explain the usage). (*d*) vs. 476. (Note the peculiarity). (*e*) vs. 366. (Supply the ellipsis, and cite a parallel passage from the Prometheus Vinctus). (*f*) vss. 221-227. (*g*) vss. 174-186.

8. Note the points in which Æschylus, Sophocles, and Euripides differ from each other in style, etc., as writers of Tragedy.

B.A. HONOURS.

VIII. GREEK POETS.

TUESDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, with an explanatory note when you deem it necessary in any of the extracts :—

(A) Pindar, Olymp. VII., vss. 36-86.

2. What was the occasion and subject of this Ode?

3. Translate the following, noting any peculiarities, or differences of interpretation :—

(*a*) *τελεῖ θεῶν δύναμις καὶ τὰν παρ' ὅρκον καὶ παρὰ ἐλπίδα κούφαν κτίσιν.* (*b*) *πολλὰ δ' ἀνθρώποις παρὰ γνώμαν ἔπεσεν, ἐμπαλιν μὲν τέρψιος, οἱ δὲ ἀνιαραῖς ἀντικίρσαντες ζάλαις, ἐσλὸν βαθὺ πήματος ἐν μικρῷ πεδάσειψαν χρόνῳ.* (*c*) *ἐκ θεοῦ δ' ἀνὴρ σοφαῖς ἀνθεῖ ἐσαεὶ πραπίδεσσιν.* (*d*) *τὸ καυχᾶσθαι παρὰ καιρὸν μανίαισιν ὑποκρίκει.* (*e*) *ἔπεται δ' ἐν ἑκάστῳ μέτρον. νοῆσαι δὲ καιρὸς ἄριστος.* (*f*) *πονον δε ἐλαβον παῦροί τινες.*

4. (*a*) Write short notes on the etymology and meaning of :—*καχλάζοισαν, ζωθάλμιος, εὐθυμάχαν, ξυνόν, δαίντι, πρόφατον, γλαυκοί, χάρματα, ἐνόπλια, ἐνδομάχας, σκυτάλα.* (*b*) Parse the following, noting the dia-

lectic peculiarities:—*λαχοῖσαν, μάσσονα, ποντιᾶν, τίν, ἀλαλκε, ἐδικε, ἀλώσιος, δίδοι, πράξαις, φαντί.* (*c*) A note on the dialect of Pindar.

5. Translate, (B) Aristophanes, The Frogs:—(*a*) vss. 167-180. (*b*) vss. 1379-1400.

6. Ext. (*a*) (1) Scan vs. 169, and show the construction. (2) *ἄττα*, how formed? (3) *τῆς ὁδοῦ*,—what use of the Genitive? Ext. (*b*) Name the dramas, as far as you can, from which the citations are made. Give your explanation of vs. 1400. (*c*) What were the grounds of the animus of Aristophanes against Euripides, political and literary?

7. (*a*) Analyse the choral part between vss. 675-735, and show in what is it said to be defective. (*b*) Give an outline of the monody in vss. 1331-1364, and point out what assumed defects of Euripides are held up to ridicule.

8. Translate, (C) Theocritus, (*a*) Id. vi., vss. 29-41. (*b*) iv., vss. 44-53. (*c*) ii., vss. 23-32.

9. Parse and give the Attic equivalents of the following forms:—*πάταξα, ἐντί, νίκη, ἐιθων, ἰσαμι, ἵητο, ἰφίητι, ἄπερ, θᾶσαι, ἐυίν, ἀείδες ἄειδες.* (*b*) The age and characteristics of the poetry of Theocritus.

10. Translate, (D) Hesiod, Works and Days, vss. 296-308. Illustrate the use of *δίον* from Homer.

B.A. HONOURS.

IX. GREEK PROSE COMPOSITION.

TUESDAY, APRIL 1ST:—AFTERNOON, 2 TO 5.

Examiner,..... ..... REV. GEORGE CORNISH, LL D.

Translate into Greek:—

(A) 1. He said, the half of my goods I give to the poor. 2. I am not going to deny that I did the deed. 3. The kings made an offensive and defensive alliance. 4. The oracle *declared* that on burying my father who *was killed*, and *carrying off* this prize, *I should do away with* my shame and *win* renown. (Use one verb only in Greek for translating all in *Italics*. 5. Gratiam habebit et referet.

(B) The kings of that day were so noble, that they chose rather to die for the salvation of their subjects than live and change their country for another. Men say that Kodros bade the Athenians give heed to[1] when he should end his life, assumed the dress of a beggar[2] to trick the foe, slipped out[3] of the gate, and began to pick up fuel before the town. On two men

coming out to him from the camp, and trying4 to learn by enquiry what was going on in the town, one of them he fell on and slew with his sickle. The one who was left, enraged against Kodros, and thinking him a poor man, drew his sword and killed him. On this the Athenians sent a herald and asked for their king to bury him, telling them all the truth about the oracle, which said that the death of Kodros would save the country. The Peloponnesians surrendered him, and knowing that it was no longer possible for them to hold the country, went away.

B.A. HONOURS.

X. LATIN PROSE COMPOSITION.

TUESDAY, APRIL 1ST :—MORNING, 9 TO 12

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

Translate into Latin:—

(A)

In the same year that the "last of the Greeks" was murdered, the great Hannibal also perished. A fugitive at the court of King Prusias of Bithynia, demanded by T. Quinctius Flaminius, who was in Asia, to settle the relations of Prusias and Eumenes, he was on the point of being delivered up to the foes he had so well and consistently hated from the day when he swore the oath at the altar five and fifty years before. His great life had been a failure; Melcarth had deserted him; now he took poison to escape the pitiless vengeance of Rome. He might meet his father Hamilcar with a clear conscience.

(B)

Herodotus, son of Lyxes, was born in 484 B.C. at Halicarnassus in Caria. This city was Dorian, but had a large Ionian element in its population. The family of Herodotus, a noble one, was probably Dorian but he may have been familiar with the Ionic dialect from his youth. At the time of his birth the city was governed, under Persia, by Artemisia, the queen who fought so bravely for Xerxes at Salamis. Her grandson and successor Lygdamis put to death Panyásis, the maternal uncle of Herodotus,—a man known in literature as one of the restorers of epic poetry. Herodotus, we are told, fled from Lygdamis to the Ionian island of Samos; returned to Halicarnassus after the tyrant had been driven out; but again left his native place, and came to Athens about 446 B.C. Athenian power, art and poetry were then at their height under Pericles. Herodotus came at Athens into a society as variously brilliant as the world has ever seen. He was the intimate friend of the poet Sophocles; and we have the beginning of an ode said to have been addressed to him by Sophocles in 440 B.C.,—the year of the *Antigone*, a play in which Sophocles alludes to a story told by Herodotus in his third

book. In 443, probably, Herodotus went to Thurii, a colony founded by Athens on the site of Sybaris in South Italy. He visited Athens again, later than 432, for he saw the Propylaea or colonnaded entrance of the Acropolis completed in that year. His death, probably at Thurii, is placed by some as early as 428 B.C., since there are signs that he did not live to revise his History; by others, as late as 406.

B.A. HONOURS.

XI. HISTORY OF GREECE AND ROME.

WEDNESDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,..... REV. GEORGE CORNISH, LL.D.

1. Into what periods may the history of Greece be divided?

2. Name the Greek historians who wrote before the time of Herodotus.

3. (*a*) Give the legendary history of the Dorians. (*b*) What is the date assigned to their conquest of the Peloponnesus? (*c*) Distinguish between the Σπαρτιῆται, the Περίοικοι, the Εἵλωτες, the Νεοδαμώδες, and the Μόθωνες, under the government of Sparta. Explain the κρυπτεία.

4. τὸ Ἑλληνικὸν ἐὸν ὁμαιμόν τε καὶ ὁμόγλωσσον (ἔχον δὲ) θεῶν ἱδρύματά τε κοινὰ καὶ θυσίας ἠθέα τε ὁπότροπα (Herod. 8, 144). Comment on this famous passage as to the characteristics of the Greeks.

5. State the causes of the greatness of Athens at the outbreak of the Peloponnesian war. By what policy might her power have been best maintained?

6. Give an account of the λειτουργίαι under the Athenian constitution.

7. τοὺς μὲν ναυμαχήσαντας μίαν καὶ Πλαταιεῖς εἰνὸς εἶναι κάντὶ δοίλων-δεσπότας:—Sketch the historical facts here referred to.

8. What was the cause of the Romans first taking a part in the affairs of Greece?

9. Sketch the political history of Rome down to the time of the Decemvirate.

10. Define the functions and powers of the Consul, Censor, Prætor, and Tribune of the Commons under the Republic. Explain also the

terms:—Populus, Plebs, Curia, Comitia Centuria, Patres Conscripti, Quirites.

11. In what ways did the Punic Wars contribute to the extension of the dominion of Rome?

12. The causes of political and social decay that led to the collapse of the Republic.

B.A. HONOURS.

XII. GENERAL PAPER.

THURSDAY, APRIL 24TH:—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the principal rules for the accentuation of the Greek verb. (*b*) Accentuate, with the proper *spiritus*, the following ext.:—

Αμαζονες γαρ Αρεως μεν το παλαιον ησαν θυγατερες, οικουσαι δε παρα τον Θερμωδοντα ποταμον, μοναι μεν ωπλισμεναι σιδηρῳ των περι αυτας πρωται δε των παντων εφ ιππους αναβησαι, οις ανελπιστως ὁ απειριαν των εναντιων ηρουν μεν τοὺς φεύγοντας, απελειπον δε τους διωκοντας ενομιζοντο δε δια την ενψυχιαν μαλλον ανδρες η δια την φυσιν γυναικες· πλεον γαρ εδοκουν των ανδρων ταις ψυχαις διαφερειν η ταις ελλειπειν.

(*c*) Cite words having different meanings according to difference of accent.

2. Derive and define the term *Case*. Classify the usages of the cases in Latin, and add the corresponding case in Greek.

3. (*a*) Give Goodwin's enumeration of the uses of the Participle in Greek. (*b*) Classify the uses of the Middle Voice. (*c*) Are there any traces of a middle voice in Latin, and how is the want of that voice provided for in Latin?

4. Illustrate the so-called concreteness of the Latin tongue. To what may it be ascribed?

5. Explain the method of reckoning time by Olympiads. When was it introduced? How were dates recorded in different states?

6. (*a*) What are the earliest Greek tragedies of which we have any notice? (*b*) Trace the growth of Tragedy to its highest form. (*c*) Ac-

count for the position occupied by the Chorus in Greek Tragedy. Who gave it most importance?

7. (*a*) Give Donaldson's classification of Greek plays, with the substance of his remarks on the origin of Comedy and Tragedy among the Greeks. Give also the etymology of the terms *τραγωδία* and *κωμωδία*.

(*b*) Explain the terms:—*περιπέτεια*, *στάσιμον*, *πάροδος*, *κομμός*, *ἐκκύκλημα*, *παράβασις*

8. What form of literary composition was said to indigenous among the Romans? What was the metre chiefly in use before the introduction of Greek metres?

9. (*a*) A short account of the Roman Comic and Satiric poets. (*b*) Explain the following literary terms:—Fescenninæ, Saturæ, Mimæ, Atellanæ, Fabula Palliata, Togata, Prætextata, Contaminatio.

10. A short account of the rise and development of History among the Romans.

MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

GEOMETRY—ARITHMETIC.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners,..... ..... { ALEXANDER JOHNSON, LL.D.; G. H. CHANDLER, M.A.

The answers are to be written on separate sets of papers headed A and B respectively to correspond to the questions.

A.

1. Find a fourth proportional to three given lines.

a. In a triangle ABC, the bisector of the vertical angle BAC meets the base at D and the circumference of the circumscribed circle at E, show that BA, AD, EA, AC are four proportionals.

2. Similar triangles are to one another in the duplicate ratio of their homologous sides.

3. If from any point without a circle a tangent and a secant be drawn, the rectangle contained by the whole secant and the external segment of it shall be equal to the square on the tangent.

a. If two circles intersect at A and B, and PQ is a tangent to both circles, prove that AB produced bisects PQ.

4. Extract the square root of 4.1209.

5. Add together $3\frac{1}{2} + 4\frac{2}{5} - 2\frac{3}{7}$ and divide by half the product of .003 and $\frac{1}{3}$.

B.

6. Inscribe a regular quindecagon in a given circle.

a. Find the number of degrees in each angle of this polygon.

b. In a given circle inscribe a triangle whose angles are as the numbers 3, 5, 7.

7. If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base shall have the same ratio as the sides have to one another. Also

8. Show that the rectangle contained by the sides is equal to the rectangle contained by the segments of the base, together with the square on the line which bisects the vertical angle.

9. What principal will amount to $173.00 in 5 years, at $3\frac{1}{2}$ per cent. per annum, simple interest?

10. How much water must be mixed with 6 gallons of vinegar at 15 cts. per gallon and 9 gallons at 18 cts. per gallon, in order that the mixture (of the three) may be worth 14 cts. per gallon. (By arithmetic).

FIRST YEAR.

TRIGONOMETRY AND ALGEBRA.

FRIDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiners..... { ALEXANDER JOHNSON, LL.D.
G. H. CHANDLER, M.A.

A.

1. Define sine, cosine, tangent and secant, and find their values for an angle of 120°.

2. Trace the changes of sign of the sine as the angle increases from 0 to 2π.

3. Prove that the sides of any triangle are in the same ratio as the sines of the angles opposite them.

(*a*) Hence, if the hypotenuse of a right-angled triangle be double one of the sides, find the angles of the triangle without the use of tables.

4. Solve the equations:—

(*a*) $\frac{x}{3} - \frac{y}{6} = \frac{1}{2}$; $\frac{x}{5} - \frac{3y}{10} = \frac{1}{10}$

(*b*) $\frac{a - x}{1 - ax} = \frac{1 - bx}{b - x}$

(*c*) $\frac{\sqrt{a + x}}{a} + \frac{\sqrt{a + x}}{x} = \frac{\sqrt{x}}{b}$

5. Three times the greater of two numbers exceeds twice the less by 27; and the sum of twice the greater and five times the less is 94. Find the numbers.

6. Simplify $3b\sqrt[3]{2a^5b^2} - 7\sqrt[3]{2a^5b^5} + 8a\sqrt[3]{2a^2b^5}$

B.

7. State and prove the rule for reducing radians to degrees.

8. Show that

(*a*) $\cos(A + B) = \cos A \cos B - \sin A \sin B$,

(*b*) $\cos A = 2\cos^2\frac{A}{2} - 1$,

(*c*) $\frac{\sin A + \sin B}{\cos A + \cos B} = \tan\frac{A + B}{2}$,

(*d*) $\operatorname{cosec} 2A - \cot 2A = \tan A$.

9. In any triangle

(*a*) $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$,

(*b*) $\cos A + \cos B + \cos C = 1 + 4\sin\frac{A}{2}\sin\frac{B}{2}\sin\frac{C}{2}$.

10. Show that $8\sqrt{\frac{1}{4}} - \frac{1}{2}\sqrt{12} + 4\sqrt{27} - 8\sqrt{\frac{3}{16}} = 13\sqrt{3}$, and that $(8 - 5\sqrt{2}) \div (3 - 2\sqrt{2}) = 4 + \sqrt{2}$.

11. Solve the equations

(*a*) $x - \frac{x^3 - 8}{x^2 + 5} = 2$,

(*b*) $\begin{cases} 2(x - y) = 11, \\ xy = 20 \end{cases}$

12. The differences between the hypotenuse and the sides of a right-angled triangle are 3 and 6, respectively; find the sides.

INTERMEDIATE EXAMINATION.

GEOMETRY—ARITHMETIC.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, LL.D.
A. H. WALTERS, B.A.

The answers are to be written on two separate sets of papers headed A and B respectively to correspond to the questions.

A

1. In a right-angled triangle if a perpendicular be drawn from the right angle to the hypotenuse, it divides the triangle into parts which are similar to the whole and to each other.

a. A B is a diameter of a circle, and through A any straight line is drawn to cut the circumference in C and the tangent at B in D: prove that A C is a third proportional to A D and A B.

2. Find a third proportional to two given straight lines.

3. On a given straight line construct a segment of a circle containing an angle equal to one-third of two right angles.

4. Reduce to a vulgar fraction the circulating decimal .3$\dot{5}\dot{6}$.

5. A box is made of wood 2 inches thick, and the outside is two feet long, one foot wide, and 6 inches deep; find the ratio of its weight to the weight of a solid block of the same size and material.

6. Two trains start at the same moment from the two ends of a railway 400 miles long; they travel at the rate of 30 and 40 miles an hour respectively: find where they will meet.

B

7. If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base shall be in the same ratio as the conterminous sides of the triangle.

a. Prove that this is also true when the external angle at the vertex is bisected and the bisector cuts the base (defining the term segment).

8. In a given circle inscribe a regular quindecagon.

9. Prove that angles in the same segment of a circle are equal, in the case where the segment is less than a semi-circle.

10. Extract the square root of 2 to three places of decimals.

11. Find the interest on $3,756 36 for 5 months at 5½ per cent.

12. Find the weight of snow which covers a square mile to the depth of two feet, if ten inches of snow be equal to one inch of water and a cubic inch of water weigh 252.5 grains.

INTERMEDIATE EXAMINATION.

TRIGONOMETRY—ALGEBRA.

FRIDAY, APRIL 11TH :—MORNING, 9 TO 12.

Examiners,..... .... { ALEXANDER JOHNSON, LL.D.
A. H. WALTERS, B.A.

A.

1. Explain in detail a method for finding the distance between two rocks in the sea, when the distance between two objects which are on the shore and visible from the rocks is known; stating the measurements to be made, and giving fully the formulae for the calculation.

2. A tower stands at the foot of an inclined plane whose inclination to the horizon is 9°; a line is measured up the incline from the foot of the tower of 100 feet in length. At the upper extremity of this line the tower subtends an angle of 54°. Find the height of the tower.

3. Find by logarithms the cube root (to four places of decimals) of 451. Prove the process, and verify your work by ordinary multiplication.

4. Solve the equations:—

$$(a) \quad x + \frac{3}{y} = \frac{7}{2}; \quad 3x - \frac{2}{y} = \frac{26}{3}$$

$$(b) \quad \frac{2x-1}{x+1} + \frac{3x-1}{x+2} = 4 + \frac{x-7}{x-1}$$

5. Simplify the expression

$$\frac{1}{x-2a} - \frac{4}{x-a} + \frac{6}{x} - \frac{4}{x+a} + \frac{1}{x+2a}$$

6. Find the greatest common measure

$$x^3 + x^2 - 2 \text{ and } x^3 + 2x^2 - 3.$$

B

7. The three sides of a triangle are 374.5, 576.2 and 759.3 feet respectively in length. Find the angle opposite the side 374.5.

8. Prove

(*a*) $\cos(A + B) = \cos A \cos B - \sin A \sin B$;

(*b*) $\tan(A - B) = \dfrac{\tan A - \tan B}{1 + \tan A \tan B}$

(*c*) $\sin A + \sin B = 2 \sin \frac{1}{2}(A + B) \cos \frac{1}{2}(A - B)$

9. Find the number of seconds in the unit of circular measure.

10. Solve the equations

$$(a) \quad \frac{5x+3}{x-1} + \frac{2x-3}{2x-2} = 9;$$

$$(b) \quad \sqrt{4a+x} = 2\sqrt{b+x} - \sqrt{x}.$$

11. Find the time between 5 and 6 o'clock when the hour and minute-hands of a watch are together.

12. Reduce to their simplest form

$$\sqrt{a\,x^2 - 6\,a\,x + 9\,a} \text{ and } \sqrt{(x^2-y^2)\,(x+y)}$$

THIRD YEAR.

MECHANICS AND HYDROSTATICS.

WEDNESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Explain how the idea of *mass*, as distinguished from *weight* or *volume*, enters into Mechanics. Define *pound, poundal, dyne, erg, foot-pound.*

a. Calculate the number of *ergs* in 1390 *foot-pounds.*

2. A body is revolving uniformly in a circle; prove that it must be acted on by a force tending to the centre of the circle, and varying directly as the square of the velocity and inversely as the radius of the circle.

a. State and explain the calculations by which Newton ascertained that the force which compels the Moon to move in an orbit round the Earth is the same as that which makes a stone thrown into the air fall to the ground

3. If the length of a pendulum which beats seconds is found to be 39.13 feet in a certain place, calculate the space through which a body falling *in vacuo* at that place would descend in one second.

4. A ship is found to be moving through the water towards the North at the rate of 6 miles an hour, while at the same time the whole mass of water in which the ship floats is moving towards the North West at the rate of 2 miles an hour. Find the actual direction of her motion and the distance she will travel in two hours.

5. Find, by the principle of the "constancy of work done," the ratio of the Power to the Resistance when there is equilibrium in the case of the wheel and axe.

6. Find the centre of gravity of a homogeneous thin plate cut into the form of a triangle.

7. Find the resultant of two parallel forces acting in the same direction

8. Supposing that the density of the atmosphere is uniform in ascending upwards, and its pressure at the surface of the earth is 15 lbs. to the square inch, calculate in miles the height of the atmosphere.

9. State Boyle and Mariotte's Law, and describe how it has been proved What precautions must be taken in the experiment.

10. A cylinder of brass (sp gr. 7.82) 4 inches in diameter and 1 inch thick is fastened closely to a cylinder of elm (sp. gr. 0.673) of same diameter, so as to make one compound cylinder, which will float in water with its axis vertical and 3 inches of it above the surface; find the length of the cylinder of elm.

11. Prove that in the suction pump the effective pressure on the piston is equal to the weight of the water column, whose base is the area of the piston, and whose height is the height of the water in the pump above the level of the well.

12. State the two principles from which the equations are derived for solving problems connected with the specific gravity of gaseous mixtures.

THIRD YEAR.

OPTICS—ASTRONOMY.

FRIDAY, APRIL 11TH:—MORNING, 9 TO 1.

Examiner,..... .... ALEXANDER JOHNSON, LL.D.

1. Describe the principle of the simple microscope, and explain the method of finding its magnifying power.

2. Describe the astronomical telescope and determine its magnifying power.

3. Find the focal length of a plano-convex lens of glass, the index of refraction being $\frac{3}{2}$.

4. Prove that the distance of the focus of the incident light from a lens is a mean proportional between the distances of the incident focus from the conjugate focus and from the principal focus of rays coming in the opposite direction.

5. If a ray of light fall on a convex mirror, and any point P on the direction of the ray be joined to the centre, the joining line will be cut by the reflected ray produced in a point p such that the distances of P and p from the surface will be to each other in the ratio of their distances from the centre.

6. A candle-flame 1 inch in length is placed at a distance of 12½ inches from a convex lens whose focal length is one foot; will it form an image on a screen properly placed? Prove your answer, and find (1) the position of the image whether real or virtual, (2) its magnitude.

7. Distinguish between Planets and Fixed Stars. In what sense is the latter term used? From another point of view, show by one or more examples that it is not true. Illustrate the principle by which we learn that the sun with the whole solar system is moving onward in space. At what rate and in what direction?

8. Give an account and a classification of the Nebulae. Regarded physically, what are they?

9. Give any theory of the spots on the Sun.

10. Draw a diagram of the Earth as seen from the Sun at the summer solstice when it is noon at Greenwich.

11. How is it that we always see the same side of the Moon, but sometimes parts of it that are not visible at other times? Explain the *daily libration*.

12. In a total eclipse of the Moon, which side of the Moon is first darkened, and why?

B.A. ORDINARY EXAMINATION.

MECHANICS—HYDROSTATICS.

THURSDAY, APRIL 10TH:—AFTERNOON, 2 TO 5.

Examiners,..... ALEXANDER JOHNSON, LL.D.
A. H. WALTERS, B.A.

1. If a body move uniformly in a circle, prove that it must be acted on at each instant by a force tending to the centre of the circle and equal to $\frac{v^2}{r}$.

(*a*) Supposing the Planets to travel uniformly in circles round the Sun, and that the squares of their periodic times are proportional to the cubes of their distances from the Sun, prove that they must be attracted to the Sun by a force which varies inversely as the square of the distance.

2. State the object and prove the principle of Atwood's machine.

a. Find how far the heavier body will fall in two seconds, the weights being 12 and 10 lbs. respectively.

3. Find the ratio of the Power to the Resistance when a body is kept at rest on an inclined plane by a power parallel to the plane.

(*a*) If the force required to draw a train on a level railroad be 8 lbs per ton, find the force required to ascend a gradient of 1 in 50.

4. Find the centre of gravity of the perimeter of a triangle.

5. Two men carry a load weighing 100 lbs. suspended from a pole 10 feet long at a point 4 feet from one end. What load does each man carry?

6. Let the standard weight in Nicholson's hydrometer be 300 grains; calculate the specific gravity of a specimen of mineral whose first and second weighings give 25.36 grains and 102.33 grains. *Give the reasoning involved in the calculations in this and the next question, without using a formula.*

7. If a prismatic diving-bell 10 feet high be sunk in sea-water (sp. gr. =1,028) until the water rises half-way up the bell, find how far the top of the bell must sink below the surface, the temperature remaining the same.

8. Given the volume, pressure, and temperature of a gas, find a *metric* formula that will give its volume at any other temperature and pressure.

9. If the elastic force of steam in a boiler be 5½ atmospheres, calculate in lbs. the pressure on a safety-valve whose area is 5.4 square inches.

10. The upper side of a sluice-gate is 10½ feet beneath the surface, its dimensions are 3 feet vertical by 18 inches horizontal; calculate the pressure upon it.

B.A. ORDINARY EXAMINATION.

ASTRONOMY—OPTICS.

FRIDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Prove that for objects within 80° of the Zenith, the correction for refraction is proportional to the tangent of the Zenith distance.

2. Prove that the illuminated part of the Moon which is visible to us is measured by the external angle between the lines joining the centre of the Moon to the centres of the Sun and of the Earth, and hence account for the phases of the Moon.

3. Assuming that the distances of the Sun and Moon from the Earth are 92,000,000 miles and 240,000 miles respectively and that the periodic time of the Moon is 27.3 days and of the Earth 365¼ days, find the ratio of the mass of the Sun to that of the Earth, explaining and proving the truth of your method.

4. State Kepler's Laws.

a. Describe the manner in which the first of them may be verified in the case of the Earth.

5. Explain by a diagram the comparative lengths of day night throughout the year at the Equator and in latitude 66° 32′.

6. Prove that the latitude of any place is equal to the altitude of the pole.

7. A ray of light falls nearly perpendicularly on a glass prism of small refracting angle; find the deviation produced by passing through, and calculate it if the angle of the prism be 32′, the refractive index being $\frac{3}{2}$.

8. If the focal length of a lens be $1\frac{1}{2}$ inches, compare its magnifying power or two persons, whose distances of distinct vision are 10 inches and $5\frac{1}{2}$ inches respectively.

9. The incident and conjugate foci of a pencil are 42 inches and 14 inches respectively distant from a lens, at opposite sides, find the focal length and the kind of lens.

10. When a pencil of rays is reflected by a concave spherical mirror, the focal length of the mirror is a mean proportional between the distances of the conjugate foci from the principal focus.

11. Describe the Newtonian telescope and find its magnifying power.

12. The dispersive power of fluor spar is .022, find the dispersion produced by a prism of this substance of 6° 11′ angle (μ = 1.434.)

B.A. AND THIRD YEAR.

EXPERIMENTAL PHYSICS—LIGHT AND HEAT.

WEDNESDAY, APRIL 9TH:—MORNING 9 TO 12.

Examiner, ...ALEXANDER JOHNSON, LL.D.

1. State the meaning of the index of refraction in the wave theory of light. Prove it for a plane wave.

2. Describe any one way for finding the length of a wave of red light. Explain the physical cause of the sensation of color, illustrating it numerically for red and violet light.

3. A prism is used to refract a beam of light:—state the colors of the spectrum (according to Newton) in the order of refrangibility, beginning with the least refrangible. State also the effects of:—

(*a*) Varying the *angle* of the prism only.

(*b*) Varying the *material* of the prism only.

(*c*) Refracting through a second prism

with its refracting edge parallel to the first and turned either to the same or to the opposite side.

(*a*) Describe the mode of making the experiments in the class room.

4. State various ways of producing polarized light, and give some physical property of it. How may it be employed to exhibit a state of strain in a transparent body?

(*a*) Give the theoretical description of a beam of plane-polarized light.

5. Given a convex lens of 1 ft focal length, where would you place a candle in a darkened room so as to get (1) the largest image, real and inverted; (2) a virtual and erect image? Illustrate by diagrams.

6. Explain the principle of Bunsen's photometer.

(*a*) A standard candle and a gas-flame which is equal to c standard candles are placed d feet apart; where must the screen be placed in order to be equally illuminated by them?

7. The bright spots of sunlight found amid the shadows of trees are circular or elliptical in shape; explain this.

8. Prove that the coefficient of cubical expansion of a substance is approximately 3 times the coefficient of its linear expansion.

a. Find the increase in volume of a sphere of iron 4 inches in diameter, if its temperature be raised from 20° Fah. to 212° Fah., the coeff. of linear expansion of iron for 1° C. being .000012.

9. If the sphere in the previous question be placed when at 100° C. in a gallon of water at 0° C., what will be the common temperature after a time, the specific heat of the iron being assumed to be .112 and its specific gravity 7.2?

10. Describe a method of restoring to the perpendicular the walls of buildings that may have bulged outwards.

(*a*) Investigate a formula for calculating the force exerted in the process.

11. A flask of thin glass, terminating in a long glass tube open at top, is filled with water at 60° Fah., which rises to some distance in the tube; the flask is suddenly immersed in a vessel of hot water; state and explain the ensuing phenomena.

12. Describe the principle of the Gas Engine.

HONOUR EXAMINATIONS.

FIRST YEAR.

GEOMETRY (*First Paper*).

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. The difference between the squares of the tangents from any point P to two circles is equal to twice the rectangle contained by the perpendicular from P on the radical axis and the distance between the centres of the circles.

2. Describe a circle having its centre at a given point and cutting a given circle orthogonally.

3. If from a fixed point any variable line A P be drawn to a fixed line P D, and a point C be taken in the line, so that the rectangle A P. A C is constant, find the locus of the point C.

4. Describe, in a given triangle, a triangle given in species whose area shall be a minimum.

5. If a line passing through the centres of two circles cuts them in the points A, B, C, D respectively, prove that the square of their direct common tangent is equal to the rectangle A C. B D.

6. If the base A B of a triangle be divided in D so that m A D = n D B; then m A C^2 + n B C^2 = m A D^2 + n B D^2 + (m + n) C D^2

7. Three times the sum of the squares of the sides of a triangle is equal to four times the sum of the squares of the lines bisecting the sides of the triangle.

8. When two sides of a triangle are given in magnitude, the area is a maximum when they contain a right angle.

9. Inscribe a square in a triangle.

10. Given the base of a triangle in magnitude and position, and given the difference of the squares of its sides, find the locus of the vertex.

HONOUR EXAMINATIONS.

FIRST YEAR.

GEOMETRY (*Second Paper*).

TUESDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. If a hexagon be inscribed in a circle the intersections of the opposite sides are collinear.

2. If two triangles have the lines joining corresponding vertices concurrent, the intersections of corresponding sides must be collinear.

3. If X, Y, Z be three co-axal circles, the tangents drawn from any point of Z to X and Y are in a given ratio.

4. If four collinear points form an harmonic system, their four polars with respect to any circle form an harmonic pencil.

5. If a quadrilateral be inscribed in a circle, and at its angular points four tangents be drawn, the six points of intersection of these four tangents lie in pairs on the sides of the harmonic triangle of the inscribed quadrilateral.

6. Any line cutting a circle, and passing through a fixed point, is cut harmonically by the circle, the point, and the polar of the point.

7. If two circles touch two others, the radical axis of either pair passes through a centre of similitude of the other pair.

8. Given the base of a triangle, the difference of the base angles, and the difference of the sides construct it.

9. Given the base of a triangle, the perpendicular and the sum of the sides, construct it.

10. If a triangle given in species have one angular point fixed, and if a second angular point moves along a given line, the third will also move along a given line.

11. Define an "inverse curve," and prove that the inverse of a circle is either a line or a circle according as the centre of inversion is in the circumference of circle or not.

12. Prove that the anharmonic ratio of four concyclic points can be expressed in terms of the chords joining these points.

HONOUR EXAMINATIONS.

FIRST YEAR.

THEORY OF EQUATIONS, ALGEBRA.

THURDSAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Write down and prove a general formula for expanding $f(x + h)$ in a series of powers of h.

(*a*) Apply it to expand $4x^3 + 6x^2 - 7x + 4$ when x becomes $x + h$

2. Find by a short method the quotient and remainder when

$$x^5 + x^2 - 10x + 113$$

is divided by $x + 4$. Prove the truth of the method.

3. Tabulate $2x^2 + x - 6$ for the following values of x, viz.:—

$$4, -3, -2, -1, 0, 1, 2, 3, 4$$

4. Solve the equation

$$x^4 - 16x^3 + 86x^2 - 176x + 105 = 0$$

two roots being 1 and 7.

5. Transform the equation

$$x^3 - \tfrac{1}{2}x^2 + \tfrac{2}{3}x - 1 = 0$$

by a change of the roots so that the coefficients shall not be fractional.

6. Find the equation whose roots are those of

$$x^4 - 5x^3 + 7x^2 - 17x + 11 = 0$$

each diminished by 4.

7. Find a superior limit to the positive roots of the equation

$$x^4 - 5x^3 + 40x^2 - 8x + 23 = 0$$

8. State and prove Newton's method for finding a superior limit to the positive roots of an equation.

Apply it to the equation

$$x^4 - 2x^3 - 3x^2 - 15x - 3 = 0$$

9. Find by Sturm's Theorem the number and situation of the real roots of the equation

$$x^3 - 2x - 5 = 0$$

10. Find the positive root of the equation

$$x^3 + x^2 - x - 100 = 0$$

Correct to four decimal places.

11. Sum the series

$$1^2 + 2^2 + 3^2 + 4^2 + \&c. + n^2$$

12. Find four terms of $\sqrt{1 + x}$ by the theorem of undetermined coefficients.

13. Expand a^x in a series of powers of n.

HONOUR EXAMINATIONS.

SECOND YEAR.

I. ANALYTIC GEOMETRY.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find the equation of the chord joining the points $x' y'$, $x'' y''$ on the circle $x^2 + y^2 = r^2$. Hence deduce the equation of the tangent at $x' y'$.

2. Find the condition that $y = m x + b$ should touch $x^2 + y^2 = r^2$.

3. If a chord of constant length be inscribed in a circle it will always touch another circle.

4. Find the equation which will represent the lines bisecting the angles between the lines represented by the equation $A x^2 + B x y$ and $C y^2 = 0$.

5. Given the angles of a triangle; one vertex is fixed, another moves along a fixed right line; find the locus of the third.

6. Given three fixed lines meeting in a point, if the three vertices of a triangle move, one on each of these lines, and two sides of the triangle pass through fixed points, prove that the remaining side passes through a fixed point.

7. Perpendiculars are let fall from a point P on two fixed lines, and their feet M, N are joined; if MN be constant in length, find the locus of P.

8. Find the locus of the vertex of a given triangle, given the base and the ratio of the parts into which the sides are divided by a fixed line parallel to the base.

9. Find the polar equation of a right line, (1) directly, (2) by transformation from rectangular to polar co-ordinates.

a. Find the polar equation of a circle by a similar transformation.

10. Find the length of the perpendicular from (3, —4) on

$$4x + 2y - 7 = 0;$$

the angle between the axes being (1) a right angle, (2) 60°.

11. Prove that the perpendiculars at the middle points of the sides of a triangle meet in a point.

12. Form the equations of the sides of the triangle joining the points (2, 1), (3—2), (—4, —1).

HONOUR EXAMINATIONS.

SECOND YEAR.

II. PLANE AND SPHERICAL TRIGONOMETRY.

THURSDAY, APRIL 17TH:—AFTERNOON, 2.30 TO 4.30.

Examiner,..... .... ALEXANDER JOHNSON, LL.D.

1. State and prove De Moivre's theorem for a fractional index.

2. Hence deduce a formula for cos $n\ a$ in powers of the sine and cosine.

3. Find the value of $\sin\left(\sin^{-1}\frac{1}{2} + \cos^{-1}\right)$

4. Find the sum of n terms of the series

$$\sin^2 a + \sin^2(a + \beta) + \sin^2(a + 2\beta) + \text{etc.}$$

5. Prove that

$$\tan^{-1} x - \frac{1}{3} x^3 + \frac{1}{5} x^5 - \text{etc.}$$

6. In a spherical triangle prove

$$\cos A = \frac{\cos a - \cos b \cos c}{\sin b \sin c}$$

a. Hence prove $\sin^2 A = \dfrac{4n^2}{\sin^2 b \sin^2 c}$

where $4n^2 = 1 - \cos^2 a - \cos^2 b - \cos^2 c + 2\cos a \cos b \cos c$.

7. Express the side of a spherical triangle in terms of the trigonometrical functions of the angle.

8. Given the hypothenuse of a right-angled spherical triangle equal to 84° 20′ and the angle $A = 35° 25'$ find a.

9. In any spherical triangle given

$A = 68° 30'$ $B = 74° 20'$ $C = 83° 10'$ find c.

(*a*) How would you calculate the area in square miles of this triangle if it were on the earth's surface? Find a formula.

HONOUR EXAMINATIONS.

SECOND YEAR.

III. ANALYTIC GEOMETRY (*Second Paper*).

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Taking the general equation of a conic, find the locus of the middle points of all chords parallel to the line $Ax + By + C = 0$. Show that all these loci intersect in general in a point.

2. If a quadrilateral be inscribed in a conic section, the intersection of the two diagonals is the polar of the third diagonal.

3. The sum of the squares of the reciprocals of two semi-diameters of an ellipse at right angles to each other is constant.

4. Prove that the equation of the pair of tangents from the point $x' y'$ to an ellipse is

$$\left(\frac{x'^2}{a^2} + \frac{y'^2}{b^2} - 1\right)\left(\frac{x^2}{a^2} + \frac{y^2}{b^2} - 1\right) = \left(\frac{xx'}{a^2} + \frac{yy'}{b^2} - 1\right)^2$$

5. Find the length of the perpendicular from the centre on the tangent to an ellipse; and thence show that a parallelogram circumscribing an ellipse will have a constant area if its sides are parallel to a pair of conjugate diameters.

6. Find the centre of the curve

$$xy + 3ax - 3ay = 0$$

7. Prove that the equation of the tangent at any point $x' y'$ of the hyperbola $4xy = a + b^2$ is

$$\frac{x}{x'} + \frac{y}{y'} = 2$$

8. If a be the angle which the normal (n) makes with the axis of prove

$$n = \frac{a(1 - e^2)}{\sqrt{1 - e^2 \sin^2 a}}$$

9. Drawing a line from the focus of an ellipse to any point in the curve, prove that the line through the centre drawn parallel to this line, and terminated by the tangent is equal to the semi-axis major.

10. Prove that the locus of the points of contact of tangents to a series of confocal ellipses from a fixed point on the axis major is a circle.

11. Prove that the three middle points of the sides of a triangle and the three feet of the perpendiculars lie on a circle whose equation in trilinear co-ordinates is

$a^2 \sin A \cos A + \beta^2 \sin B \cos B + \gamma^2 \sin C \cos C - (\beta\gamma \sin A + \gamma\alpha \sin B + \alpha\beta \sin C) = 0$

12. Prove by *trilinear* co-ordinates that the three perpendiculars at the middle points of the sides of a triangle meet in a point.

HONOUR EXAMINATIONS.

SECOND YEAR.

IV. DIFFERENTIAL AND INTEGRAL CALCULUS.

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Define differential coefficient and find it for the functions

$$x^n, \sin x, \log x$$

2. Find *geometrically* the differential coefficient of $\cos x$.

3. Differentiate

$$y = \cos^{-1} \frac{b + a \cos x}{a + b \cos x}; \quad y = \log \left(\frac{1+x}{1-x}\right)^{\frac{1}{4}} - \tfrac{1}{2} \tan^{-1} x.$$

4. Find the nth derived function of $e^{ax} \cos bx$.

5. State and prove Taylor's Theorem and deduce Maclaurin's Theorem from it.

6. Prove Maclaurin's theorem independently.

7 If A be the chord of any circular arc, B that of half the arc, and L the length of the arc, prove that, approximately,

$$L = 2B + \tfrac{1}{3}(2B - A)$$

8. Find the value of $\dfrac{x \sin x - \frac{\pi}{2}}{\cos x}$ when $x = \dfrac{\pi}{2}$

9. Find the condition that a given function of x should have a maximum or minimum value.

10. Find a formula for the integration of $\dfrac{dx}{a + 2bx + cx^2}$. Show that there are two cases.

11. Find the integrals

$$\int \frac{dx}{x\sqrt{x^2+1}}, \qquad \int \frac{d\theta}{\sin\theta}, \qquad \int \frac{d\theta}{a+b\cos\theta}$$

12. Find by the method of integration by parts the integral

$$\int \tan^{-1}x\, dx$$

13. Find the integral $\int \frac{x\, dx}{(1+x)\,(1+x^2)}$

B.A. HONOURS.

MATHEMATICS AND NATURAL PHILOSOPHY.

I. LUNAR THEORY—NEWTON'S PRINCIPIA.

TUESDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D

1. Express the true anomaly of an undisturbed planet in terms of the mean anomaly in a series of powers of the eccentricity.

2. Prove that the centre of gravity of the earth and moon describes an orbit very nearly in one plane and elliptic.

3. Investigate the differential equation of the moon's radius vector:

$$\frac{d^2u}{d\theta^2}+u = \frac{P}{h^2u^2} - \frac{T}{h^2u^3}\frac{du}{d\theta} - 2\left(\frac{d^2u}{d\theta^2}+u\right)\int \frac{T}{h^2u^3}\,d\theta$$

4. Investigate a rule for the retention of terms of the higher order in integrating the differential equations of the moon's motion, when seeking an approximate solution of the equations to any given order.

5. Calculate $sin\ 2\ (\theta-\theta')$ and $cos\ 2\ (\theta-\theta')$ to the first order and $\frac{P}{h^2u^2}$ as far as is necessary to solve the equation of the radius vector to the second order.

6. Taking the values found in the answer to the previous question, and assuming

$$\frac{T}{h^2u^3} = -\tfrac{3}{2}m^2\left\{ sin\,[\,(2-2m)\,\theta - 2\beta\,] \right.$$
$$- 2e\ sin\,[\,(2-2m-c)\,\theta - 2\beta + a\,]$$
$$\left. + \tfrac{3}{2}e^2\ sin\,[\,(2-2m-c]\,\theta - 2\beta + 2a\,]\right\}$$

solve the differential equation of the radius vector to the second order.

7. Explain the physical meaning of the term

$$-3m\ e'\ sin\ (m\ pt + \beta - \zeta)$$

in the expression for the moon's longtitude.

8. Explain the effect of the term

$$m^2\ a\ cos\ \{(2-2m)\ \theta - 2\beta\}$$

in the expression for the radius vector.

a. Show how Newton obtains the same result.

9. Find in Newton's manner the effect of the central disturbing force on the eccentricity.

10. Investigate also the effects of the ablatitious force on the motion of the nodes (Lib. I. Prop. 66, Cor. II.)

11. Find the law of force tending to the pole by which a body may describe an equiangular spiral.

12. A body revolves in an ellipse round a centre of force in the focus, find the periodic time.

B.A. HONOURS.

II. EXPERIMENTAL PHYSICS—LIGHT.

WEDNESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. A molecule of the ether is agitated at the same time by two rectilinear vibrations, at right angles to one another, of the same wave-length, of given amplitudes and phases, and in the same plane, find the path described by the molecule.

2. In Young's experiment of the interference of the light diverging from two near apertures, prove that the wave-length belonging to any colour may be determined from the position of the corresponding bands by the formula

$$\frac{2\ cx}{nb}$$

c being the distance between the apertures, b the distance of the screen, and x the distance of the band of the nth order from the centre of the fringes.

a. Prove that the bands on the screen are a series of hyperbolas. What is the appearance if *white* light be used in the experiment, as contrasted with the case of light of one uniform colour.

3. State the two principles from which a complete explanation of the phenomena of *diffraction* is derived: and apply them to give a general explanation of the *fringes* produced by a *single edge*.

4. In the case referred to in the previous question, show how to compute the relative places of the same fringe, for different positions of the luminous point and of the screen.

5. In what way may the *wave-lengths*, corresponding to any given point of the spectrum, be determined from the phenomena of *gratings*?

6. In what way may the same wave-lengths be obtained from experiments on *thin plates*?

7. When a beam of common light falls upon a plate of glass, the polarized light in the reflected is connected with that in the transmitted part by a law given by Arago. State it.

8. How is the intensity of light reflected from metals at different incidences experimentally determined by M. Jamin?

9. State the laws of *interference* of polarized light as discovered by Fresnel and Arago.

10. When polarized light passes through a double refracting prism and is received on an analyser, explain why, in two positions of analyser which are at right angles to one another, the colours of the transmitted light are complementary.

B.A. HONOURS.

III. ATTRACTIONS—THEORY OF THE POTENTIAL—ELECTROSTATICS.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Find the attraction of a uniform thin circular plate on a point situated on the perpendicular to the plate through its centre.

2. Determine the laws of attraction for which the attraction of a uniform spherical shell on any external particle is the same as if the shell were condensed into an infinitely small particle at its centre.

3. Define potential, and prove that the gravitation potential of any attracting solid mass varies in a continuous manner from point to point in space, whether the points be inside the mass or outside.

4. Explain and prove the equation

$$\frac{d^2V}{dx^2} + \frac{d^2V}{dy^2} + \frac{d^2V}{dz^2} = -4\pi\rho,$$

5. Prove that at all points in empty space on a given line of force (define this), the resultant attraction-intensities are inversely proportional to the normal sections of the tube of force at these points.

6. If the law of attraction be that of nature, prove that a thin shell of uniform density, bounded by similar, similarly situated and concentric ellipsoidal surfaces produces a constant Potential at all points in its interior.

7. The components of the attraction of an ellipsoid on an external point are :—

$$X = 3\gamma\, Mx \int \frac{\lambda\, d\lambda}{\sqrt{(a^2+\lambda^2)^3\,(b^2+\lambda^2)\,(c^2+\lambda^2)}}$$

$$Y = 3\gamma\, My \int \frac{\lambda\, d\lambda}{\sqrt{(a^2+\lambda^2)\,(b^2+\lambda^2)^3\,(c^2+\lambda^2)}}$$

$$Z = 3\gamma\, Mz \int \frac{\lambda\, d\lambda}{\sqrt{(a^2+\lambda^2)\,(b^2+\lambda^2)\,(c^2+\lambda^2)^3}}$$

taken between limits.

8. Prove that if we know any one possible mode of distributing an electric charge on a given conductor which is removed from the influence of all electrified bodies, we know the only one possible.

9. A conductor placed in air is subject to the action of any electrified bodies, prove that if σ is the surface density at any point on the conductor the force exerted on the electricity of the conductor per unit of area at the point is $2\pi\sigma^2$

10. Prove that the work done in the discharge of a Leyden Jar is

$$\frac{K\,S\,(V-V^1)^2}{8\pi\,h}$$

explaining the formula.

11. Prove that the surface density at any point of an ellipsoidal conductor (on which the charge is Q) is

$$\frac{Q\,p}{4\pi abc}$$

(*a*) Hence deduce the surface density at any point of an electrified circular plate, viz. :

$$\sigma = \frac{Q}{4\pi a\sqrt{a^2-r^2}}$$

12. Find the capacity of a very long cylindrical conductor for an idiostatic charge.

B.A. HONOURS.

IV. EXPERIMENTAL PHYSICS—ELECTRICITY AND MAGNETISM.

SATURDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Explain the method of drawing the characteristic curve of a dynamo. If the curves for horse-power be drawn on the same diagram, prove they are rectangular hyperbolas.

2. Explain what is meant by the *dimensions* of physical units, and show by an investigation of dimensions that electrical resistance may be regarded as a velocity. Show also that the ratio of the dimensions of the two units of quantity in the electro-static and the electro-magneti systems of units may be regarded as a velocity. State its numerical value approximately, and the argument founded on this in support of a physical theory.

3. Define the *absolute* units of resistance, current, and E. M. F. State the units of length and mass adopted instead of those of the C. G. S. system, in order to derive the *practical* units from the absolute units; and thence obtain the proper factors for the reduction. Define the *ohm* as a *velocity*.

4. If an ammeter is calibrated by causing water to be raised in temperature by a coil of wire through which the current passes, prove the formula that would be employed.

(*a*) 3,000 grammes of water are raised 1° C in temperature by a current passing for 3 minutes through a coil whose resistance is .25 ohm; find the number of amperes in the current.

5. In a Helmholtzs tangent galvanometer the radius of each of the two equal circular coils was 16 centimetres. Find the strength of the current which would produce a deflection of 25°.

6. A current from a galvanic cell produced a deflection of 33° 30′ in a tangent galvanometer of small resistance; when an additional resistance of 1.39 ohms was introduced the deflection fell to 8°. Find the resistance of the cell, neglecting that of the galvanometer.

7. Find the resistance of an Edison incandescent lamp if a current of 75 amperes pass through it when the difference of potentials at the terminals is 108 volts. Find also in foot-pounds the amount of work expended in the lamp.

8. Define the *capacity* of a conductor, and prove that the capacities of spheres are numerically equal to the number of centimetres in their radii.

(*a*) An insulated metal sphere of 2·5 centimetres radius is charged with electricity to the potential 10. Find the number of units of electricity it contains.

9. Prove the formula for finding the capacity of a *condenser*, consisting of two parallel plates electrified to a given potential.

(*a*) An air condenser is made of two circular metal plates of 6 centimetres radius, their distance apart being .6 centimetre; find the charge if the collecting plate be raised to the potential 4.

10. A sphere of 4 centimetres radius when charged to potential 18 gave a sparking distance of 1 millimetre; but when its potential was raised to 500, it discharged itself spontaneously into the air; calculate the electrica pressure on the air and compare it with the atmospheric pressure.

11. Given the magnetic moment of a suspended magnet, its moment of Inertia, and the Horizontal component of the Earth's magnetism, find the velocity of the magnet at its position of rest, for a given deflection.

12. Investigate formulæ for currents and resistances in divided circuits.

a. A galvanometer has a resistance of 5,000 ohms, find the resistance of a *shunt* which will reduce its sensibility one-hundredfold.

B.A. HONOURS.

V. CALCULUS.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find the condition to which u and v must be subject in order that $u = f(v)$ may be a first integral of the form

$$Rr + Ss + Tt = V$$

where R, S, T, V, u and v are functions of x, y, z, p and q; and f is an arbitrary function.

2. Find the complete solution of the equations

$$(5y + 9z)\,dx + dy + dz = 0.$$
$$(4y + 3z)\,dx + 2dy - dz = 0.$$

3. Show that the curve in which the radius of curvature varies as the cube of the normal is a conic section.

4. Integrate $\frac{d^2u}{dx^2} - a^2 \frac{d^2u}{dx^2} = \phi(x, y)$

5. Integrate $\frac{d^2y}{dx^2} + n^2y = \cos nx.$

6. The equation $2x\,ydx + (y^2 - 3x^2)\,dy = 0$ has an integrating factor which is a function of y. Determine it, and integrate the equation.

7. Find the complete solution of the equations:

$$4\frac{dx}{dt} + 9\frac{dy}{dt} + 44x + 49y = t$$

$$3\frac{dx}{dt} + 7\frac{dy}{dx} + 34x + 38y = e^t$$

8. Integrate the linear differential equation

$$\frac{dy}{dx} + Py = Q$$

where P and Q are functions of x.

9. Determine the integrating factor for

$$(x^2 + y^2 + 2x)\,dx + 2ydy = 0$$

and integrate the equation.

10. Find the complete solution of

$$\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + 13y = 0.$$

11. Change the independent variable from x to z in the equation

$$x\,\frac{d^2y}{dx^2} + a^2y = 0$$

where $x = \frac{1}{z}$

12. If $z = \cos ax\,\phi\left(\frac{y}{x}\right) + \sin ax\,\psi\left(\frac{y}{x}\right)$ prove $rx^2 + 2sxy + ty^2 + a^2x^2z = 0.$

13. Find the equation of the pedal of the epicycloid.

14. Find the envelope of a system of concentric and co-axal ellipses of constant area.

B.A. HONOURS.

VI. ASTRONOMY.

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Investigate an equation for determining the time (measured from opposition) of a lunar eclipse.

2. Find when Venus is brightest, neglecting the eccentricity of the orbit.

3. If ϕ be the *astronomical latitude* and ϕ' be the *geocentric latitude* of a place, prove that

$$\tan \phi' = \frac{b^2}{a^2} \tan \phi$$

and hence show that

$$\phi' = \phi - m \sin 2\phi + \frac{m^2}{2} \sin 4\phi - \text{etc.}$$

4. Prove (1) that the *aberration* of a fixed star is equal to the sine of the *Earth's way* multiplied by a constant coefficient. And (2) find the value of this coefficient approximately, assuming that light travels from the Sun to the Earth in $8\frac{1}{4}$ minutes.

5. Investigate the general differential equation for the refraction of a star in Zenith distance.

6. Prove that the Equation of Time vanishes four times in a year.

7. Give a method for determining the obliquity of the Ecliptic.

8. Given two altitudes of the sun and the interval of time between the observations, show how the latitude of the place may be found.

9. Find the relation between the true and the mean anomaly in an elliptic orbit.

B.A. HONOURS.

VII. MECHANICS (*First Paper*).

SATURDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Investigate the equations of equilibrium of an extensible string.

a. A slightly extensible string, uniform when not acted on by external forces, is suspended from two fixed points and acted on by gravity; find approximately the curve in which it hangs.

2. If the mass of each of a system of bodies be multiplied by the square of the distance of its centre of mass from a given point, the sum of the products thus obtained is least when the given point is the centre of mass of the system.

3. Find the analytical condition that a system of forces acting on a rigid body may have a single resultant.

4. A rectangular board is held with its plane horizontal by three vertical strings attached to three of its corners; find the point in its area at which a weight must be placed, so that the tensions of the strings shall be given multiples of the weight of the board.

5. A heavy uniform beam rests against a rough horizontal plane and against a rough vertical wall, the vertical plane through the beam being at right angles to the wall and the ground; determine the greatest weight that can be affixed to it at a given point, so that equilibrium may be preserved.

6. A particle is constrained to move in a circle under the influence of a repulsive force, acting from a point on the circumference, and varying as the distance; find the pressure on the curve, the initial position being at the centre of force, and the particle starting from a state of rest.

7. A body is describing a circle under an attracting force directed to the centre, if the force be suddenly reduced to one-half, find the subsequent path of the body.

8. If h be the height due to the velocity V at the earth's surface, supposing its attraction constant, and H the corresponding height when the variation of gravity is taken into account, prove that

$$\frac{1}{h} - \frac{1}{H} = \frac{1}{R}$$

9. Two masses P and Q are connected as in Atwood's machine, find the acceleration when the mass of the revolving pulley is taken into account.

10. Prove that any simple harmonic motion is equivalent to two circular vibrations in opposite directions.

B.A. HONOURS.

VIII. MECHANICS (*Second Paper*).

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. A body is moving round a fixed point; prove that the locus of the instantaneous axis of rotation in the body is

$$A(H^2 - AT)x^2 + B(H^2 - BT)y^2 + C(H^2 - CT)z^2 = 0$$

2. Prove that the velocity with which the plane of the horizon, at a given place, turns round a vertical axis is $\omega \sin \lambda$ where ω is the earth's angular velocity, and λ is the latitude.

3. Prove analytically that the most general infinitely small displacement which a free rigid body can receive consists of a motion of translation and a motion of rotation round an axis through any arbitrary point of the body.

a. Prove that the direction and magnitude of the rotation remain unaltered, whatever be the point through which the axis of rotation is supposed to pass.

4. A homogeneous bar falling freely without rotation impinges upon a smooth horizontal plane; find the velocity of rotation immediately after impact.

5. If a body be rotating round a principal axis through its centre of inertia, no forces being supposed to act, prove that there is no stress on the axis, and the body will continue to rotate round that axis with a uniform angular velocity.

6. If a body have two equal and opposite velocities of rotation round two parallel axes, prove that the motion of any point is at right angles to the plane containing the parallel axes, and the velocity of the point is equal to the distance between the axes multiplied by the angular velocity.

7. The moment of momentum of a rigid body round an axis through any point O is equal to the corresponding quantity with respect to a parallel axis through the centre of inertia, together with the moment of momentum relative to O of the whole mass concentrated at the centre of inertia and moving with it.

8. In the motion of a rigid body when not acted on by any force, prove that the angular velocity at any instant is proportional to the intercept on the instantaneous axis of rotation through the centre of inertia cut off by the momental ellipsoid.

9. A heavy body starts from rest under the action of gravity round a fixed horizontal axis, which is a principal axis at the centre of suspension. Find the stress on the axis.

10. A uniform rod is turning in a vertical plane round a horizontal pivot at one of its extremities; find the tendency to break at any point.

11. A number of spheres are projected in different directions with different initial velocities along a rough horizontal plane; find the path of their common centre of inertia.

B.A. HONOURS.

IX. GEOMETRY OF THREE DIMENSIONS.

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Find the equations of the *helix*; and thence obtain the equation of the surface formed by its radii of curvature.

2. Prove that at any point on a surface, there are two directions, at right angles to each other, such that the normal at a consecutive point intersects the original normal; and these are the directions of the two principal sections at the point.

3. Find the equation of the cylinder whose sides are parallel to the intersection of $a' x + b' y' + c' z = 0$. $a'' x + b'' y + c'' z = 0$, and which passes through the intersection of $a x + \beta y + \gamma z = \delta$ with

$$\frac{x^2}{b^2} + \frac{y}{a^2} - \frac{z^2}{c^2} = 1$$

4. Find the partial differential equation of conoidal surfaces.

5. Find the equation of the surface generated by a straight line which moves parallel to the plane of $x\ y$, and passes through the curves:

$$\frac{x^2}{a^2} + \frac{z^2}{c^2} = 1, \quad y = 0.$$

$$\frac{y^2}{b^2} + \frac{z^2}{c^2} = 1 \quad x = 0$$

6. If three right lines at right angles to each other touch the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z}{c^2} = 1$$

and intersect each other in the point $x'\ y'\ z'$, prove that

$$x'^2 (b^2 + c^2) + z'^2 (c^2 + a^2) + z'^2 (a^2 + b^2) = b^2 c^2 + c^2 a^2 + a^2 b^2.$$

7. The distance between two points, one on each of two confocal ellipsoids, is equal to the distance between the two *corresponding* points.

8. Through a given point can be drawn three quadrics confocal to a given ellipsoid, viz., an ellipsoid, an hyperboloid of one sheet, and an hyperboloid of two sheets.

9. Find the locus of the pole of a given plane with regard to a system of confocal surfaces.

10. Given seven points on a quadric, the polar plane of a fixed point passes through a fixed point.

11. The parallelepiped whose edges are three conjugate semi-diameters of an ellipsoid has a constant volume.

12. Express the length of the perpendicular from the centre on the tangent to an ellipsoid at any point in terms of the angles which it makes with the axes.

ENGLISH LANGUAGE AND LITERATURE.

FIRST YEAR.

ENGLISH LITERATURE.

WEDNESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Give the subdivisions of the Italian period of English Literature.

2. Make notes on Wiglaf, Gregory of Tours, the Exeter Book, Ohthere and Wulfstan, the Grave, the Battle of Maldon, Merlin, Holofernes, verse in the Anglo-Saxon Chronicle, the Lindisfarne Gospels, Llywarch Hen, Cædmon and Paradise Lost.

3. Give some account of the Miracle play of St. Nicholas. Mention the sets of English Mystery plays, and give an account of the manner in which they were exhibited. Notice the nature and the intention of the Shepherds' Play.

4. Compare the universe as set forth in the Divine Comedy with the universe as set forth in Paradise Lost, and mention a leading difference between Dante and Milton as poets.

5. Show that Chaucer reflects a national spirit.

6. Name the writers of the following:—Confessio Amantis, Story of Thebes, Romaunt of the Rose, Gemma Ecclesiastica, London Lickpenny, Why come ye not to Court? Give an account of each.

7. Tell what you know of William Dunbar.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE (*Spalding*).

WEDNESDAY, 9TH APRIL:—MORNING, 9 TO 12.

Examiners,..... { CHAS. E. MOYSE, B.A. / REV. PROF. LOVE, M.A. / P. T. LAFLEUR, M.A.

1. Mention the names distinctly belonging to the reign of James I, shewing its intellectual characteristics.

2. Explain, as clearly as you can, the causes that tended to produce and foster dramatic work in Elizabethan and early Stuart times.

3. Mention the two names most celebrated in theological literature in the reign of Charles I. Name one work of each, and state any opinion, theological or other, with which the writer's name is associated.

4. Give a short account of Hobbes' literary and philosophical work, and explain the bearing of his writing on the thought of his time.

5. Give the series of Shakspere's plays produced after 1600.

6. Discuss the design and practical character of The Faerie Queene. Make special note on the contents of the first book.

7. Mention one work of each of the following, and give (approximately) its date:—Butler, Drayton, Dryden, Cowley, Sir Thomas Browne, Sidney, Raleigh, Thomas Fuller, Selden, William Bellenden, Knolles, Bishop Jewell.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE: *The Leading Poets of the Nineteenth Century.*

WEDNESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A

[Only eleven questions are to be answered.]

1. In what work of Burke are his views concerning the French Revolution set forth? What is their general tone? What was said regarding the replies of Paine and Mackintosh?

2. Develope leading doctrines in the Prelude concerning the relation between Nature, Man, and Poetry.

3. Explain how the Rime of the Ancient Mariner came to be written; give a brief outline of its story, and point out wherein its power lies.

4. What were Goethe's views concerning the influence of English literature on German? Write on the influence, real or attributed, of German literature on English, with reference to the poets of the course.

5. (*a*) Of what poets of previous English literature does Byron speak in terms of praise? (*b*) Draw his "triangle;" (*c*) Classify his longer poems. (*d*) Write on him as a poet of nature and of life, using his poems in illustration.

6. What was said with reference to Keats and (*a*) Leigh Hunt, (*b*) Milton? Mention a leading feature in Keats' vocabulary, and enter into some detail concerning it. Make notes on the following characters: Endymion, Glaucus, Isabella. What poem best displays Keats' characteristics as a poet?

7. (*a*) In what connection was reference made to the Dedication of Laon and Cythna, and the Hymn to Intellectual Beauty? (*b*) Show why Alastor, Prince Athanase and Epipsychidion were grouped together, and enter into some detail concerning them. (*c*) Compare the Prometheus Vinctus with Prometheus Unbound, and show that the latter reflects leading beliefs of Shelley.

8. Give a brief account of the *schoolboy* days of each of the poets of the course, except Wordsworth and Tennyson, with the view of showing early propensities and literary favourites.

9. Disclose the inner spirit of Robert Browning's Christmas Eve and Easter Day, and compare it with In Memoriam.

10. Mention the source of each of the following quotations:

(*a*) Samuel Taylor Coleridge, Logician, Metaphysician, Bard!

(*b*) Dear God! the very houses seem asleep.

(*c*) But if the wife should drink of it first,
God help the husband then!

(*d*) Worlds on worlds are rolling ever
From creation to decay.

(*e*) He who hath bent him o'er the dead
Ere the first day of death is fled.

(*f*) Tramp! tramp! along the land they rode.
Splash! splash! along the sea!

(*g*) and all his men
Look'd at each other with a wild surmise—
Silent, upon a peak in Darien.

(*h*) (I) gathered up a stone
And pocketed the relic, in the guise
Of an enthusiast.

(*i*) Bliss was it in that dawn to be alive,
But to be young was very heaven.

(*k*) They carved at the meal
With gloves of steel.

11. Make a few explanatory and critical notes on the pieces from which (*a*), (*d*), (*g*), (*k*) are taken. Make a few historical and personal notes on (*h*.

12. Notice the literary movement which preceded the French Revolution. Distinguish between the Girondins and Jacobins, and write in tabular form and in chronological order leading events of the period 1789-1794.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE: *A Midsummer Night's Dream.*

WEDNESDAY, 9TH APRIL:—AFTERNOON, 2 TO 4.30.

Examiners, { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Shew that the influence of (*a*) the Mediæval liturgical drama, and of (*b*) the Revival of Learning can be clearly seen in the plays of Shakspere and his contemporaries.

2. In what category is *A Midsummer Night's Dream*, considered merely as a play, to be placed? Discuss fully its character and obvious purpose, supporting your statements with references to the text.

3. Is there any probability that Shakspere intended some of the scenes and personages to be satirical? If so, which ones?

4. Relate the events in Act II., dealing with the quarrel between Oberon and Titania, *or* those in Act III., dealing with the wrangling between the two pairs of lovers. Quote from the text, where it may be desirable.

5. Write a short sketch of the character of Bottom.

6. Explain: nine men's morris, so flew'd so sanded, a fair vestal throned by the west, hold or cut bowstrings, I can gleek upon occasion, such seething brains such shaping fantasies, he hath rid his prologue like a rough colt.

INTERMEDIATE EXAMINATION.

ENGLISH AND CANADIAN HISTORY AND ESSAY.

FRIDAY, 18TH APRIL:—MORNING, 9 TO 1.

Examiners, { CHAS. E. MOYSE, B.A. / REV. PROF. LOVE, M.A / P. T. LAFLEUR, M.A.

(N.B.—Students will answer the following pairs of groups of questions, namely, A and B, *or* A and C; but *not* B and C. Write the answers to each group on separate bundles of paper.)

A.

1. Make brief notes on:—Vortigern, Bede, the Peaceable, the Unready. Knut, the Confessor, the Red King, Beauclerc, Jack Cade, Vasco da Gama.

2. Write what you know concerning:—Battle of the Standard, the loss of Normandy, Simon de Montfort, Statute of Mortmain, the Lollards, Battle of Barnet.

3. Outline the reign of Richard III.

B.

1. State in the form of a summary the important incidents that took place during the Commonwealth (1649–1660).

2. Make short notes on:—Monk, Walpole, Lord George Gordon, Lord Grey, Disraeli.

3. Outline the principal events connected with the war in the Crimea and give dates.

C.

1. Make notes on Sillery, Ticonderoga, Pepperell, Washington in the valley of the Ohio, Montgomery, Brock.

2. Give some account of important events that took place when De Frontenac was governor, and notice De Frontenac's character.

3. What was the object and nature of the Constitutional Act of 1791? Who was Governor when it was passed, and on what ground was it opposed in the English Parliament?

ESSAY.

Write on a separate bundle of paper an essay of not less than two pages one of the following subjects:—

I. The Paris Exhibition of 1889.

II. Imperial Federation.

III. Dulce et decorum est pro patriâ mori.

THIRD YEAR.

CHAUCER AND RHETORIC.

WEDNESDAY, APRIL 9TH:—AFTERNOON, 2 TO 6.

Examiners,..... ..... { CHAS. E. MOYSE, B.A. / PAUL T. LAFLEUR, M.A.

(Write the answers to A and B on separate bundles of paper.)

A. CHAUCER.

A. 1. Indicate the pronunciation of *oo*, *ou*, *ee*, *a*, *ay*, *au*, *i*, *y*, *gh*, *ch*. On what assumption is research into Chaucer's pronunciation based? Does the Prologue supply evidence?

2. Write not more than a page on one of the following subjects:

(*a*) The Ecclesiastics of the Prologue.

(*b*) The commercial England of Chaucer's day.

3. Scan the following lines, refer them to their connections, and make notes on the portions in italics.

(*a*) As lene was his *hors* as is a *rake*

(*b*) So priketh *hem* nature in here *corages*

(*c*) And Frensch she spak ful faire and fetysly

(*d*) In siknesse nor in *mes*chief to visite
The *ferreste* in his parissche

(*e*) Wel cowde he stele corn and tollen thri*es*

(*f*) And palmers *for to seeken* straunge strondes

(*g*) In *Jaunger* hadde he at his owne *g*ise
The *yonge gurles* of the diocise

(*h*) But *alther*best he sang an offertorie

(*i* Alg*ate* he waytede so in his achate

(*j*) For he was late *y*-come from his viage

(*k*) For *him was lever have* at his beddes heede

(*l*) A *forster* was he *sothly* as I *g*esse

(*m*) That often hadde ben *atte parvys*

(*n*) *For he was grounded in astronomye*

(*o*) His botes clapsed faire and fetysly

4. Describe the Frere *or* the Sompnour *or* the Pardoner.

5. Say in what connections the following allusions occur and make notes on those in italics: Austin, *Cristofre*, Parys, *Bathe*, Rouncivale, *Stratford atte Bowe*, Kyng William, *Southwerk*, *Galien*, *the Greete see*, *Dertemouthe*.

6. Indicate an important difference between comfort, shamefacedness, ointment, arrears, nostrils, delight, carved (past tense), pierce, virtue, England, Christian, seek, verdict, whole, and their Chaucerian forms. Add explanatory notes when you can.

7. Select from the Prologue a word which illustrates (*a*) the weakening of the Latin atonic ending; (*b*) the loss of the Latin atonic ending; (*c*) the softening of the Latin initial *c*; (*d*) excrescent *b*; (*e*) excrescent *d*; (*f*) excrescent *r*. Give the doublet of pace, chivalry, sovereign, whole.

8. Notice Chaucer's characteristics as a poet, and substantiate your statements by very brief quotations from the Prologue.

B. Rhetoric.

(N.B.—High marks will be given for excellence in composition.)

1. Define style, as applied to composition, and give illustrations from any well known author.

2. What are the subdivisions of Purity of Diction? Explain fully and illustrate any one.

3. Classify the figures of speech discussed in the lectures; and explain clearly the nature of Climax, Antithesis and Epigram.

4. What are the principal conditions of the Pathetic? Why has verse generally been preferred to prose, in order to express Pathos?

5. Discuss the question as to "how far metrical effects may be attempted in prose."

6. Name and define, with illustration, the divisions of Historical writing from the standpoint of treatment.

7. State with clearness and fulness the purposes of dramatic writing, and support your statement with examples from the literature of the drama.

B.A. ORDINARY EXAMINATION.

MODERN HISTORY.

Lectures. MYERS:—*Mediæval and Modern History.*
BRYCE:—*Holy Roman Empire.*

WEDNESDAY, APRIL 9TH:—AFTERNOON 2 TO 5.

Examiners,..... .... { CHAS. E. MOYSE, B.A. / REV. PROF. A. T. LOVE, B.A.

[Students of Morrin College will answer groups C and D. Students of McGill College will answer group A and not more than nine questions in all from groups B, C, and D, of which at least two must be taken from C.]

A. 1. (*a*) Contrast the connection of a Greek colony with the mother city and of a mediæval colony in the New World with the mother country.

(*b*). Contrast the government of New France with that of the New England States.

2. From a geographical point of view, explain extensions of Aragon and Venice in the Old World and of the colonizing nations of Europe in the New. What points were illustrated by reference to Hudson, Cuba, Cromwell, the Indian Reserves, Louisburg?

3. Compare present motives to colonize with past.

B. 1. Mention events which caused Rome to lose its old pre-eminence as the centre of the Roman Empire.

2. Describe the conquests of Justinian and note their bearing on the subsequent destiny of the Empire.

3. What is meant by the "middle kingdom?" Notice its geography and mention the leading races which inhabited it. Into what did it break up?

4. (*a*) Tell what you know of the Marks.

(*b*) Contrast the kingship of Karl with that of Otto I, as bearing on the destiny of the Empire.

5. Write in detail on the leading fiefs of the French crown and their annexation.

6. Make notes on Cordova, Kief, Commodus, Frederick II. (Emp.), Canossa, Crescentius, Genseric, Theodoric the Visigoth, the Catapan, the Donation of Pippin, Emir-al-Omra, Transoxiana, the Old Man of the Mountain, Mahomet II, Kufa.

C. 1. What was the state of the human mind in the middle ages? Mention the two great ideas which expiring antiquity bequeathed to the ages that followed.

2. State some of the causes of the absence of mediæval monuments in Rome.

3. Write on the immediate influence of the Reformation on political and religious liberty and also on its influence on the name and associations of the Empire.

4. Indicate the policy of the Hapsburg Emperors, and give reasons why the Hapsburgs held the crown so long. What do you know concerning Hippolytus a Lapide?

5. Notice the leading ideas displayed in Dante's *De Monarchia*.

6. Wherein consisted the defective title of the Teutonic Emperors?

D 1. Write short notes on each of the following: Ordeals, the Code of Justinian, the Hegira, Abubekr, War of the Iconoclasts, the Great Schism, the Janizaries, the Trouveurs, the poem of the Cid, the Minnesingers Savonarola, the Eddas.

2. Subdivide the Renaissance, and write on Humanism.

3. Give an account of the Saracen conquest of Egypt.

4. Mention the causes of the decay of Feudalism, and the good results that sprang from the system.

5. Write on the rise of the Italian city republics.

6. Assign events to the following dates 664, 732, 1314, 1396, 1397.

B.A. ADDITIONAL EXAMINATION.

SWEET:—*Extt. from Anglo-Saxon Reader;*

BUCKLE:—*Hist. of Civilization in England, Vol, I, Caps. I, II; Vol. II, Cap. VIII; Vol. III, Cap. I.*

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

A. 1. Translate:—

Ext. II. ll. 32-53.
" XIII. ll. 187-207.
" XX. ll. 73-87; 172-181.

2. Parse the sentence in Ext. II beginning with *Swelce hie cwæden.*

B. 1. What are Buckle's views concerning the causes which have retarded philosophic history and the materials which the philosophic historian ought to use?

2. Deal with food and population to prove that "there is a strong and constant tendency in hot countries for wages to be low, in cold countries for them to be high."

3. What had ancient Egypt in common with India? Contrast the religion of India with that of Greece.

4. What is Buckle's estimate of the Spanish character?

5. Write on the decline of Spain.

6. (*a*) Point out physical features of Scotland which have influenced its history.

(*b*) Mention a few facts which show the insignificance of Scotch towns in the middle ages.

B.A. ADDITIONAL.

POPE:—*Essay on Criticism; Essay on Man.*

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Indicate Pope's place in the history of our literature.

2. Write on Pope's treatment of the following subjects;

(*a*) Nature.

(*b*) Imitative poetry.

(*c*) The decay of Criticism and its Revival.

3. In what connection do the following lines occur?—
(*a*) Drink deep or taste not the Pierian spring
(*b*) "What! leave the Combat out?" exclaims the Knight.
(*c*) For Fools rush in where Angels fear to tread

4. Write on the Deism of the eighteenth century, and show how it is reflected in the Essay on Man.

5. Give an outline of Epistle III *or* Epistle IV.

6. Select a few lines (not consecutive) which you consider of high merit, and say in what connection each stands.

7. How does Pope amplify this statement?—

Far as creation's ample range extends
The scale of sensual, mental pow'rs extends.

B.A. ADDITIONAL.

ENGLISH LITERATURE,

SHELLEY:—*Adonais.* TENNYSON:—*In Memoriam.*

FRIDAY, APRIL 25TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Write on Shelley's use of Nature in Adonais, and refer definitely to In Memoriam when Tennyson uses Nature in similar manner.

2. How does Tennyson introduce the *yew* and *Sorrow* as making the progress of thought?

3. Mention in logical order the leading developments of In Memoriam.

4. Write on Tennyson's characteristics as displayed in In Memoriam, and quote in illustration of your statements.

ADDITIONAL AND HONOUR EXAMINATIONS.

THIRD YEAR.

SPENSER:—*Faerie Queen*, Bk. I.; MILTON:—*Comus*; DRYDEN:—*Annus Mirabilis; Absalom and Achitophel*, Part I.; Preface to "*Fables.*"

TUESDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Why is Spenser entitled to be called the poet's poet? Does the Fairie Queene reflect the practical age in which it was written?

2. What is said in the prefatory Letter concerning the "antique poets historical?"

3. State, without any detail, (*a*) the localities in which the events described in the first Book take place; (*b*) the occasions on which Una assists the Red Cross Knight. Apply the allegory to (*b*).

4. (*a*) Give the meaning (and nothing else) of the following words and phrases: therefore I read beware; to avale; carelesse Quiet; drowsyhed; fone; in round lists; will or nill; sluggish German; gree; cypresse stadle; his new found make; Cleopolis is red; mall; an horn of bugle small; her tire and call; painted in a table; buxom; tenet portesse; a lovely fere.

(*b*) Briefly explain these references: that long wandring Greeke; fierce Orion's hound; And fifty sisters water in leake vessels draw; that renowmed snake which great Alcides .....slew; he that harrowed hell; the northerne waggoner; Great Gorgon.

5. Show that Comus both resembles and differs from an ordinary Masque.

6. "Allusions, images, and descriptive epithets embellish almost every period." *Johnson.* Illustrate.

7. "What fears, good Thyrsis? Prithee briefly show." Give the substance of the answer to the Elder Brother.

8. Dryden says he has followed Virgil almost everywhere in *Annus Mirabilis*; point out a few conspicuous instances.

9. Sketch from the poem an outline of the contest between England and Holland. Explain these references:

(*a*) And while his secret soul on Flanders preys
He rocks the cradle of the babe of Spain

(*b*) Let Munster's prelate ever be accurst
In whom we seek the German faith in vain

(*c*) Find him disowning of a Bourbon foe
And him detesting a Batavian fleet.

10. Mention the political events touched on in *Absalom and Achitophel*. Is Dryden's treatment of them fair? How does the second edition differ from the first?

11. Give the substance of Absalom's reply to Achitophel.

12. To whom does Dryden refer in the following extracts?

(*a*) His hand a vare of justice did uphold,
His neck was loaded with a chain of gold

(*b*) Prodigious actions may as well be done
By weaver's issue as by prince's son.

(*c*) Long since the rising rebels he withstood
In regions waste beyond the Jordan's flood

(*d*) The Muse's friend
Himself a muse.

(*e*) The Sanhedrin long time as chief he ruled.

Name five other characters in the poem; state who they are, and quote a pointed line referring to each.

13. How does Dryden speak of Chaucer's pilgrims and how justify his translation of Chaucer "into English?"

ADDITIONAL AND HONOUR EXAMINATIONS.

THIRD YEAR.

Anglo-Saxon:—Sweet *Extt. IV. VIII. XXI;* Early English:—Morris and Skeat, *Part II., Extt. I. IX.*

Thursday, April 3rd:—Morning, 9 to 12.

Examiner,..... ...Chas. E. Morse, B.A.

A. Translate:—

(1). Ext. IV.: 84-97; 149-158.

84-97. Give the principal parts of cwæth, cymth, séon. Párse há tte; sutheweardum; ealne weg; fylth; brádre.

(2) Ext. VIII., 175-183.

Decline Eastenglum.

(3) Ext. XII. 17-24; 45-55; 100-107; 273-235.

B. 1. Resolve the umlaut in trymian, menn, fét. Make a note on the investigation of umlaut.

2. Resolve nán, ælecgan, næfde, gárræs, guthplega, wælwulfas.

3. Mention the uses of the genitive case in Anglo-Saxon.

4. How is the passive voice formed? The future tense and the pluperfect active?

5. Conjugate in full onginnan, feallan. Decline hors, sunu, eage, hé (all genders).

C. Translate:—

Ext. II. Psalm CIII. (CIV.) 25-39.

" III. 146-161.

" VI. 85-98.

" IX. 125-155.

ADDITIONAL AND HONOUR EXAMINATIONS.

THIRD YEAR.

BURKE, *Reflections;* MACAULAY, *Essays on Clive, Ranke's History of the Popes,* and *Warren Hastings.*

SATURDAY, APRIL 5TH :—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Contrast the Tiers Etat with the British House of Commons.

2. "Government is not made in virtue of natural rights." How does Burke attempt to prove this doctrine?

3. Write on the taxation of the clergy and nobles before the Revolution.

4. Reproduce Burke's statements and criticisms concerning the constitution of the army.

5. Mention the bases of representation, and enter into detail concerning them.

6. In what connection is reference made to *Henry VIII.*, Lord George Gordon, Collins and Toland, *Henry IV. of France*? Enter into detail concerning those in italics.

7. "The fall of the Carlovingians furnishes the nearest parallel to the fall of the Moguls." Notice the various points of Macaulay's proofs.

8. Give an account of the parts played by Chunda Sahib, Omichund, Dupleix and Shah Alum in Indian affairs. How and with what result did the Dutch enter into the contest?

9. "Four times since the authority of the Church of Rome was established in Western Christendom has the human intellect risen up against her yoke." Mention them, and enter into detail concerning the last.

10. "The Church of Rome thoroughly understands what no other church has ever understood, how to deal with enthusiasts." Explain and illustrate.

11. Notice the literary tastes of Warren Hastings and his dealings with Impey.

12. Give Macaulay's estimate of Burke's knowledge of Indian affairs. Give an account of the trial of Warren Hastings.

ADDITIONAL AND HONOUR EXAMINATIONS.

THIRD YEAR.

HALLAM, *Middle Ages*, chaps. 1, 3, 5.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Make notes on the Mayors of the Palace, Pavia, Ravenna, the six lay peers of France, Simon de Montfort, the treaty of Bretigni, the Jacquerie.

2. Trace the history of the Duchy of Burgundy.

3. Make notes on the diet at Roncaglia, the countess Matilda of Tuscany, Arnold of Brescia, *arts*, the Venetian council of ten, Lorenzo de' Medici, the colonies of Genoa.

4. Describe the attempt of Doria on Venice.

5. Mention the various powers which have held possessions in the south of Italy, and give some account of the history of that portion of the peninsula.

6. What peculiarity in regard to succession to fiefs obtained in Germany? What instrument did away with it, and how?

7. Describe the growth of the free imperial cities of Germany.

8. (*a*) Mention in chronological order and without repetition of previous matter, six important events in the history of France during the period treated by Hallam, and briefly state his opinions concerning them or cite some of the facts he mentions in connection with them.

(*b*) Answer a similar question in regard to Italy.

THIRD YEAR HONOURS.

CHAUCER:—*Parlement of Foules;* SIDNEY:—*Apologie for Poetrie;* MILTON: *Areopagitica.*

FRIDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. To what event may Chaucer's poem refer? What date has been assigned to it?

2. Give the substance of the speech of Nature to the birds, and of the speeches of the three tercells.

3. Notice descriptive epithets used by Chaucer when speaking of the birds.

4. Give the meanings (and nothing else) of the following words: likerous, mette, tercell, facond, perseth, kirtils, launde, unneth, fulfilled, entermete.

5. What caused Sidney to write his *Apologie for Poetrie?*

6. Write on the following topics discussed by Sidney:

(*a*) "Poetry in all nations at this day, where learning flourisheth not is plaine to be seene."

(*b*) The comparison that Aristotle makes between Poetry and History. With what portion of Sidney's argument is this connected?

(*c*) The three leading objections to poetry. Enter into detail regarding the argument which bears on the second.

(*d*) The power of Tragedy.

(*e*) Masculine and feminine rimes.

7. Comment on the following allusions: Sortes Virgilianæ, Gorboduck, Amphitrio, Percy and Duglas.

8. What caused Milton to write his *Areopagitica?* Whence is the title taken?

9. What books were condemned by the Greeks and Romans?

10. Why must licensing fail?

11. Write on the patriotic feeling displayed in *Areopagitica*, and also on the poet's reference to himself and to English literature.

12. Give the meaning of the following words and phrases, and explain allusions: civill, Dion Prusæus, roundel, the Pontifick College, with their Augurs and Flamens, his old Sabine austerity, Porphyrius, encroachment, Radamanth, Lullius, Margites, a sensible nostrill, Palladian oyle, the golden rule, malignant.

THIRD YEAR HONOURS.

ANGLO-SAXON.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Translate:—

Béowulf: ll. 186-204.
The Fall of the Angels: 137-149.
Judith: 171-186.
The Happy Land: 41-59.
The Wanderer: 91-105.
The Riddles of Cynewulf: IV.
Charms: I.

2. Make a few notes concerning the manuscript and the editions of Bēowulf.

3 Notice theories concerning the composition of Cædmon.

4. Make notes which illustrate interesting points in regard to the syntax or the forms met with in the extract from Bēowulf.

THIRD YEAR HONOURS.

ADDISON : *Essays in the Spectator.*
LESLIE STEPHEN : *English Thought in the Eighteenth Century,*

SATURDAY, APRIL 19TH :—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Give three of the parallels which Addison draws between the work of Milton and that of Homer.

2. Prove, by means of references to statements made in the Spectator, that "Milton's genius" was strengthened by all the helps of learning.

3. What are the points dwelt upon by the Spectator as deserving of special commendation in the second and the tenth book of Paradise Lost?

4. State your own opinion as to the critical value of the Spectator's judgments on Milton as an epic poet.

5. How does Addison explain the affecting of Imagination by similitudes?

6. State clearly the attitude of Burke towards abstract political reasoning, and reproduce in outline Stephen's commentary upon it.

7. Explain how and why Johnson is considered as the incarnation of the Tory spirit of the eighteenth century.

8. Shew that the very element in the Letters of Junius which gave them strength in their own day has led to their comparative neglect in our time.

THIRD YEAR HONOURS.

MILTON : *Shorter Poems.* WORDSWORTH : *Prelude.*

MONDAY, APRIL 21ST :—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. In what way does Milton introduce *Mirth* and *Melancholy* into *L'Allegro* and *Il Penseroso*?

2. Give an outline of the course of *L'Allegro* between the lines "Till the dappled dawn doth rise" and "Till the live-long daylight fail."

3. Explain the following allusions: dark Cimmerian desert, Mab: Jonson's learned sock, Lydian airs, half-regain'd Eurydice, woo ly Ida Thebes or Pelops' line, him that left half told The story of Cambuscan bold.

4. What illusions to Arcadia and its geography and traditions does Milton make in *Arcades?* What points in regard to construction are common to *Arcades* and *Comus?*

5. Compare *Lycidas* with *In Memoriam.*

6. Examine the construction of *Lycidas.* Johnson in his critisism of *Lycidas* speaks of "remote allusions and obscure opinions." Examine his statement, and support your views by quotation and explanation.

7. Notice the literary movement which led to the French Revolution.

8. Give Wordsworth's description of

(*a*) The tavern "on long Winander's eastern shore."

(*b*) His dream about "an Arab of the Bedouin tribes."

9. Continue the themes which begin thus:

(*a*) There was a boy: ye knew him well, ye cliffs
And islands of Winander.

(*b*) From the heart
Of London and from cloisters there, thou camest.

(*c*) The curious traveller who from open day
Hath passed with torches into some huge cave.

10. Write on Wordsworth as a poet of Nature.

THIRD YEAR HONOURS.

MACAULEY: *Hist. of England, Vol. I, Chap. I.*
GREEN: *History of the English People; The Reigns of Elizabeth and Charles II.*

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. How does Macaulay support the following statements?

(*a*) "The talents and even the virtues of her (England's) first six French kings were a curse to her. The follies and vices of the seventh were her salvation."

(*b*) "To this day the constitution, the doctrines and the services of the Church (of England) retain the visible marks of the compromise from which she sprang."

(*c*) "It is impossible to believe that considerations [touching the execution of Charles I.], so obvious and so important, escaped the most profound politician [Oliver Cromwell] of that age."

2. Write on Matthew Parker, Pius the Fifth, the Poor Laws, and the Martin Marprelate controversy.

3. Examine Elizabeth's conduct towards (*a*) the Roman Catholics of England, (*b*) France.

4. Write on English Science in the reign of Charles II., the Treaty of Dover, John Bunyan.

5. Mention in their order the leading statesmen of the reign of Charles II. Indicate *briefly* the character of each, and write in such detail as time allows concerning the part any *two* of them played in politics.

LOGIC, MENTAL AND MORAL PHILOSOPHY.

INTERMEDIATE EXAMINATION.

LOGIC.

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D.
REV. PROF. MACADAM.
P. T. LAFLEUR, M.A.

1. Write a short definition of Logic, and justify it.

2. Give the logical characteristics of: organism, nationality, force, His Eminence, our American Cousin, monopoly, The Renaissance, the judicature.

3. Give the rules for logical Division.

4. Explain what is meant by the word Connotation, supporting your statements with illustrations.

5. What is conversion? Convert the following:—

a. All upright men are not indifferent to flattery.

b. The vicious deserve punishment.

c. No lover of liberty seeks to avoid discussion.

6. Prove the canon of syllogism which says that "the middle term must be distributed at least once in the premises."

7. Test formally the following cases of reasoning; reduce them, if necessary:—

a. M. cannot be a reasonable man, for he hopes that the Reform Bill will be rejected, while every reasonable man is eager that it should be carried.

b. If all the accused were innocent some would have been acquitted; we may infer, then, that none were innocent, since none have been acquitted.

c. Of two evils the less is to be preferred; occasional turbulence, therefore, being a less evil than rigid despotism, is to be preferred to it.

8. (*a*) Explain the fallacies to which Modus Ponens is liable.

(*b*) Give an example of each form of Dilemma, and shew how fallacies may occur in this kind of argument.

9. Explain and classify the fallacies of Illicit Process, Ignoratio Elenchi, and Composition; and shew what rules of syllogism "equivocation" may violate.

THIRD YEAR.

MENTAL PHILOSOPHY.

Murray's Hand-Book of Psychology, Book II., Part I.

MONDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiner,..... ..... J. CLARK MURRAY, LL.D.

1. Explain and illustrate the Associability and Comparability of Tastes *or* of Odours.

2. Explain why a single pellet placed between the two forefingers crossed appears double; *or*, why a body may appear of different magnitudes when touched by different parts of the skin.

3. Prove that Speech depends on the Musical Sensibility of the ear; *or*, explain the Perception of Harmony in its physical, its physiological, and its psychological aspects.

4. Explain the effects which the clearness or obscurity of the atmosphere may produce on our Visual Perceptions of Distance and Magnitude.

5. Explain the process of Abstraction; *or*, the two functions of General Terms.

6. Explain the distinction between Logic and the Psychology of Reasoning.

7. Explain the process of Idealisation in general, and one of its forms in particular.

8. Point out the peculiarities of the Fine Arts which address the eye.

9. Distinguish Hallucination, Illusion and Fallacy; *or*, explain the peculiarities of Dreaming.

10. Explain the terms, Intuition, A priori, Pure, Innate, Original, Necessary, Universal, as applied to Cognitions; *or*, state and criticise the Empirical theory of the idea of Time.

B.A. ORDINARY EXAMINATION.

MORAL PHILOSOPHY.

WEDNESDAY, 2ND APRIL:—MORNING, 9 TO 12.

Examiners, ... { REV. PROF. MACADAM. J. CLARK MURRAY, LL.D.

1. Describe the essential characteristics of a Moral Action.

2. (*a*) Explain what is meant by a First Principle, and (*b*) illustrate the nature of First Principles in Morals by the example of Honesty.

3. Show how diversity of moral judgments may be explained on the theory of intuitive perception of moral truth.

4. Discuss the possibility of Moral Education on the one hand, and of Education of Conscience on the other.

5. Give a full outline of either of the two main types of Ethical Theory.

6. State some of the chief objections to Utilitarianism.

7. Explain *either* (*a*) the relation of Obligations and Rights, *or* (*b*) the distinction of Perfect and Imperfect Obligations.

8. Distinguish the two leading Theories of the Will.

9. (*a*) Indicate the evidence of disorder in man's moral nature, showing how it affects the intellect; *or* (*b*) state the moral arguments for the Immortality of the Soul.

10. Sketch *either* (*a*) the chief metaphysical theories regarding the Existence of the Universe, *or* (*b*) the arguments for the Existence of a Supreem Being.

B.A. ORDINARY EXAMINATION.

ROGERS' MANUAL OF POLITICAL ECONOMY.

WEDNESDAY, 2ND APRIL:—AFTERNOON, 2 TO 5.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Define Political Economy.

2. Distinguish Value from Price, and prove that there cannot be a general rise or fall of values, though there may be of prices.

3. What part of the wealth of a country is to be classed as Capital?

4. State and criticise the Malthusian Theory of Population.

5. Mention the chief functions of Money, and explain why Gold and Silver are the most suitable materials for Money.

6. Explain *either* (*a*) the principal systems of Land Tenure, *or* (*b*) the proper definition of Rent.

7. Explain *either* (*a*) the effect of Trades-unions on capital, on rent, and on unprotected labour, *or* (*b*) the principal schemes proposed for improving the condition of the working classes.

8. Give the arguments for and against Indirect Taxation.

THIRD YEAR HONOURS.

MONDAY, 7TH APRIL:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

(*Answer only four questions in each part*).

I. *Greek Philosophy.*

1. Give an account of one philosopher of the Ionic School, *or* of one of the Eleatics.

2. Give an account of Hegesias *or* Annikeris *or* Theodorus.

3. Distinguish the three periods into which the life of Plato has been divided, and mention some dialogues which may with probability be referred to each.

4. Sketch briefly the Logic *or* the Physics *or* the Ethics of Aristotle.

5. Contrast the Physics of the Stoics and of the Epicureans.

6. Give an account of the New Academy.

II. *Murray's Handbook of Psychology*, Book II., Parts 2 and 3.

1. Explain psychologically the pleasure of Tragedy.

2. Illustrate the Emotional value of Touch *or* of Sight.

3. Distinguish the Natural and Rational Affections both of Benevolence and of Malevolence.

4. Describe the principal Feelings of Relativity.

5. What determines the Motive Power of Feelings?

6. Describe the extension of Voluntary Control over Muscle, Feeling, and Thought.

THIRD YEAR HONOURS.

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

I. *Fraser's Selections from Berkeley.*

1. State fully and exactly Berkeley's doctrine as to what is meant by the Existence of Matter.

2. State any two of the objections to this doctrine mentioned in the *Principles of Human Knowledge*, along with Berkeley's replies.

2. Explain how Berkeley applies this doctrine, especially in connection with his Theory of Vision, to prove the existence of a Supreme Mind.

4. What is the view, given in *Siris*, as to the real nature of Physical Causes?

II. *Cicero's De Finibus Bonorum et Malorum, Books III. and IV.*

1. Explain the philosophical meaning of the following terms, as used in *De Finibus*:—

κατάληψις, καθῆκον, κατόρθωμα, προηγμένα, ἀποπροηγμένα, ἀδιάφορον.

2. "Existimo veteres illos Platonis auditores, Speusippum, Aristotelem, Xenocratem; deinde eorum, Polemonem, Theophrastum, satis et copiose et eleganter habuisse constitutam disciplinam, ut non esset causa Zenoni, quum Polemonem audisset, cur et ab eo ipso et a superioribus dissideret, quorum fuit haec institutio." Translate; and make a brief note on each of the philosophers mentioned, and on their relation to one another.

3. "Haec, quae praeposita dicimus, partim sunt per se ipsa praeposita, partim quod aliquid efficiunt, partim ob utrumque. Per se, ut quidam habitus oris et vultus, ut status, ut motus; in quibus sunt et praeponenda quaedam et rejicienda: alia ob eam rem praeposita dicuntur, quod ex se aliquid efficiant, ut pecunia: alia autem ob utramque rem, ut integri sensus, ut bona valetudo." Translate; and explain the bearing of the passage on the Stoical Ethics.

4. "Totam philosophiam tres in partes diviserunt, quam divisionem a Zenone retentam esse videmus." What is the division referred to?

5. "Quum superiores secundum naturam vivere summum bonum esse dixissent, his verbis tria significari Stoici dicunt." Distinguish the three meanings referred to.

THIRD YEAR HONOURS.

THOMSON'S OUTLINE OF THE LAWS OF THOUGHT.

MILL'S LOGIC, BOOKS IV. AND V.

SATURDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain the distinction between Form and Matter, and compare it with the distinction of First and Second Intentions.

2. Explain (*a*) Logical Division and Definition and Denomination, (*b*) their connection with the three powers of a Conception.

3. Compare the common Table of Judgments (*a*) with that of Thomson, (*b*) with that of Hamilton, illustrating by examples.

4. Give any three forms of Immediate Inference, with an example of each.

5. Why is the First Figure the most natural, the Second and Third less natural, while the Fourth is altogether unnatural?

6. Explain fully the Second Requisite of a Philosophical Language, with the subordinate requirements which it implies.

7. Explain the Classification of the Fallacies, illustrating by an example of each class.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MODERN PHILOSOPHY.

MONDAY, 31ST MARCH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Connect the Agnosticism of Hobbes with the general principles of his philosophy on the one hand, and his ecclesiastical and political Absolutism on the other.

2. Make a brief note on any three of the following authors, indicating specially the philosophical drift of their writings:—Montaigne, Charron, LaMothe le Vayer, Huet, Bayle, Glanvil.

3. Give an outline *either* of the negative *or* of the positive side of Locke's philosophy.

4. Give some account of Condillac *or* Helvetius *or* Hume.

5. Give an outline of the speculations of Malebranche, connecting them with the philosophy of Descartes.

6. Sketch the philosophy *either* of Leibnitz *or* of Berkeley.

B.A. HONOURS.

ZELLER'S STOICS, EPICUREANS AND SCEPTICS.

SATURDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1 Describe the intellectual and political state of Greece at the close of the Fourth Century B.C.

2. Sketch the history of Stoicism.

4. Sketch the history of Epicureanism.

3. Give a full outline *either* of the Stoical views on Nature *or* of the Stoical Ethics.

5. Give a full outline *either* of the Epicurean views on Religion *or* of the Epicurean Ethics.

6. Give some account of Pyrrho *or* of Arcesilaus *or* of Carneades.

B.A. HONOURS.

MAINE'S ANCIENT LAW.

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. (*a*) What was the analysis of Law by Bentham and Austin? (*b*) How far does that analysis harmonize with the historical origin of Law?

2. Explain the origin and nature of Legal Fictions.

3. Explain the origin of the doctrine of a Law of Nature, and its influence on Roman Jurisprudence.

4. Trace the origin of the Roman Patria Potestas to the jural condition of primitive societies.

5. What light does the jural condition of primitive societies throw on the early history of Property?

6. (*a*) Distinguish Crime, Wrong and Sin. (*b*) Describe the effect which the confusion of these produced in early Criminal Jurisprudence.

B.A. HONOURS.

SPINOZA'S ETHICS.

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Give a sketch of Spinoza's philosophy as embodied in the Ethics, with any expository or critical remarks of your own.

B.A. HONOURS.

THE PHILOSOPHY OF KANT.

WEDNESDAY, 16TH APRIL:—MORNING, 9 TO 12.

Examiner,..... .....J. CLARK MURRAY, LL.D.

(*Answer any six, and only six, questions.*)

1. Explain Kant's use of the terms, *A priori*, *Pure*, *Transcendental*, *Transcendent*.

2. Sketch the Metaphysical and the Transcendental Expositions of space *or* of Time.

3. Give an outline of the Transcendental Deduction of the Categories.

4. Explain the Schematism of the Pure Understanding.

5. State the Principles of the Pure Understanding.

6. Give in detail the system of Cosmological Ideas.

7. Sketch the solution of the Antinomy of Pure Reason.

8. Explain the Principle *or* the Object *or* the Motive of Pure Practical Reason.

9. Explain how Kant establishes Freedom, Immortality and the Existence of God.

10. Sketch the Analytic *or* the Dialectic of Teleological Judgment.

B.A. HONOURS.

ARISTOTLE'S NICOMACHEAN ETHICS.

SATURDAY, 12TH APRIL:—MORNING, 9 TO 12.

Examiner,..... ....J. CLARK MURRAY, LL.D.

Answer only eight questions.

1. Why are the young not proper students of Ethics?

2. State Aristotle's objections to the Platonic theory of the Sovereign Good.

3. Explain fully Aristotle's division of the Soul.

4. State and explain the complete definition of Moral Virtue.

5. Show that Virtue is opposed to both extremes, but sometimes to one more than another.

6. In what sense is justice a mean between two extremes ?

7. Give the different divisions of Justice, distinguished by Aristotle.

8. Distinguish Economic from Civil Justice, and explain why Aristotle does not regard the former as Justice in the strict sense of the term.

9. Give, in substance, Aristotle's discussion of the questions :—(*a*) Can a man injure himself? (*b*) Is it worse to receive, or to commit, a wrong ?

10. State Aristotle's definitions of the several Intellectual (Dianoetic) Virtues.

11. Give, in substance, Aristotle's discussion of the question, whether incontinence is compatible with true knowledge.

12. Explain Aristotle's final description of Happiness as the Sovereign Good.

B.A. HONOURS.

OUTLINE OF HAMILTON'S PHILOSOPHY.

MILL'S SOGIC, BOOK VI.

THURSDAY, 10TH APRIL :—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Write a short essay on any two of the following subjects :—(*a*) External Perception, with an explanation of the distinction between Sensation and Perception ; (*b*) The distinction in the Qualities of Matter ; (*c*) The Law of the Conditioned, with a classification of the Conditions of the Thinkable ; (*d*) The Law of the Conditioned applied to Causality, with a classification of theories of the Causal Judgment.

2. Write a short essay on any two of the following subjects :—(*a*) Liberty and Necessity ; (*b*) Any one of the Methods of Social Science rejected by Mill ; (*c*) The Method advocated by Mill.

B.A. HONOURS.

LORIMER'S INSTITUTES OF LAW.

MONDAY, 7TH APRIL :—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Distinguish the different Schools *or* the different Methods of Jurisprudence.

2. Distinguish (*a*) Natural and Positive Laws, (*b*) the two Sources of Natural Law.

3. "Positive Laws cannot alter facts." Explain and illustrate.

4. Discuss the distinction between Perfect and Imperfect Obligations.

5. Explain the relation of Jurisprudence and Ethics.

6. In what sense does Liberty not imply, in what sense alone does it imply, Equality?

7. Distinguish *either* the Sources *or* the Objects of Positive Law.

8. Enumerate in detail *either* the Sources *or* the Objects of Positive Law.

B.A. HONOURS.

SPENCER'S FIRST PRINCIPLES.

SATURDAY, 5TH APRIL :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Sketch Spencer's statement and defence of the Relativity of all knowledge, *or* his Reconciliation of Religion and Science.

2. Define (*a*) Knowledge of the lowest kind, (*b*) Science, (*c*) Philo-

3. The Continuity, the Direction, the Rhythm of Motion. Explain one of these, and show that it is a deduction from a "primordial truth which transcends all proof."

4. Give a brief exposition of the Law of Evolution.

5 Write a short criticism of Empirical Evolutionism, as represented by Spencer's First Principles.

FRENCH.

FIRST YEAR

MONDAY, APRIL 14TH :—MORNING, 9 TO 12.

Examiner,..... P. J. DAREY, M. A., LL.D.

1. Translate into English : —

Frosine. — Oui, j'ai raison ; je le sais (1) bien. C'est là ce qu'il faudrait (2) ; mais le diantre est d'eu pouvoir trouver les moyens. Attendez : si nous avions quelque femme un peu sur l'âge, qui fût (3) de mon talent et jouât assez bien pour contrefaire une dame de qualité par le moyen d'un train fait à la hâte, et d'un bizarre nom de marquise ou de vicomtesse que nous supposerions de la basse Bretagne, j'aurais assez d'adresse pour faire accroire à votre père que ce serait une personne riche, outre ses maisons, de cent mille écus en argent comptant : qu'elle serait éperdument

amoureuse de lui, et souhaiterait de se voir sa femme, jusqu'à lui donner tout son bien par contrat de mariage ; je ne doute point qu'il prêtât l'oreille à la proposition. Car enfin il vous aime fort, je le sais (4) ; mais il aime un peu plus l'argent et quand, ébloui de ce leurre, il aurait une fois consent à ce qui vous touche, il importerait peu ensuite qu'il se désabusât en venant à vouloir voir (5) clair aux effets de notre marquise.

L'Avare, Ac. IV. Sc., I.

2. (1) Write the two simple tenses of the Subjunctive Mood of tha verb.

(2) What sort of verb is *faudrait* ? Write the simple tenses of that verb in the Indicative Mood.

(3) What tense is *fût* ? Why ?

(4) (5) Write the future and imperative of those verbs.

3. Write five nouns which are masculine in one sense and feminine in the other.

4. When an adjective qualifies two nouns how do you write it ? In what gender ?

5. When do you write in the plural nouns taken from foreign languages ?

6. When do you put the verb in the plural after two subjects singular connected by *ou* ? Give an example.

7. Translate into French : Ask your master the meaning of that rule They live on fruit. State the difference there is in those sentences between the English and the French.

8. When do you use Imperfect of the Subjunctive Mood ? Give two examples.

9. Write correctly the Past Participles in the following participles and give the rules : Les fautes que j'ai *résolu* d'éviter. La personne que j'ai *prié* de chanter. Vous avez *lu* plus de livres que je n'en ai *lu*. Ils se sont *enlevé* ce qu'ils s'étaient *donné*.

10. Translate : To begin a discourse with one. What is that to you Far from that. She has fine eyes, but they want expression. To take something in a bad sense. Entretenir un grand train. Donner dans le panneau. Il vient d'entrer. Il s'agit de savoir qui a fait cela. Au pied de la lettre.

11. Translate : Alphonso king of Aragon was riding one day on horseback. A page, who was walking before him, wounded him, through heedlessness, by pulling the branch of a tree, which struck him in the eye, and made the blood gush out. That accident at first frightened all the lords of his suite, who instantly hastened and drew near him. The king, notwithstanding the pain that he felt, cheered them, and said to them quietly : " What gives me the most concern is the sorrow of this poor page, who is the cause of my wound.

INTERMEDIATE EXAMINATION.

FRENCH.

MONDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiners..... { PROF. P. J. DAREY, M.A., LL.D.
REV. CHAS. TANNER.

1. Translate into English, the next ext. or the following:

PHÈDRE (Seule).

O toi, qui vois la honte où je suis descendue, (1)
Implacable Vénus, suis-je assez confondue?
Tu ne saurais plus loin pousser ta cruauté,
Ton triomphe est parfait; tous tes traits ont porté. (2)
Cruelle, si tu veux une gloire nouvelle,
(3) Attaque un ennemi qui te soit plus rebelle.
Hippolyte te fuit; et bravant ton courroux,
Jamais à tes autels n'a fléchi les genoux.
Ton nom semble offenser ses superbes oreilles.
Déesse, venge-toi; nos causes sont pareilles.
Qu'il aime.....Mais déjà tu reviens sur tes pas,
Œnone? On me déteste, on ne t'écoute pas.

ŒNONE.

Il faut d'un vain amour étouffer la pensée,
Madame; rappelez votre vertu passée;
Le roi qu'on a cru mort va paraître à vos yeux;
Thésée est arrivé, Thésée est en ces lieux.

OR, PHÈDRE, Ac. III, *Sc. II.* and *III.*

(1) L'HOMME D'ETAT.

Tous les huit jours, nous dînons l'un chez l'autre,
Nul n'a su mieux comprendre un temps comme le nôtre.
Il a vu, tout d'abord, que la rigidité
N'aboutissait à rien qu'à la mendicité.
Comme il n'a pas l'orgueil de conduire les hommes,
Il suit docilement le courant où nous sommes,
Et soumis, sans murmure, au jugement de tous,
Règle sur le public son esprit et ses goûts:
Au temps de l'anarchie, il fut socialiste;
Mais il est aujourd'hui dévot et royaliste,
Et fonde un comité féminin, dans le but
D'aider nos jeunes gens à faire leur salut.
Du reste, bon convive, assidu près des dames.
Sans nuire à ses plaisirs, il prend soin de nos âmes.
Ce n'est pas un niais qui se pose en Romain;
C'est un homme d'esprit, qui fera son chemin.

L'HONNEUR ET L'ARGENT, *Acte IV, Sc. III.*

2. (1) Why has descendue an *e* in the extract from Phèdre? Give the rule. (2) Parse each word of: tous tes traits ont porté. Why is porté in the singular? Give the rule fully. (3) What part of the verb is Attaque. Give in full the Imperfect Indicative and the Past Definite of this verb.

3. Translate the following expressions from *l'Honneur et l'Argent*: Comme cet horizon fuit bien dans ce fond clair. Il ne sied pas. Je me sens peu fait. Dont les qualités même (1) ont l'art de vous déplaire. Il est bien convenu qu'on ne m'attendra pas. Mon mince revenu m'interdit cette vie. Sans qu'on m'en sût (2) gré. On insulte les gens qu'on flatte de travers. Renvoyez-le; je n'y suis pas pour lui. Ce nom que l'on prodigue à tort. Puissé-je (3) être pillé. Sur la foi des régents. Nous reprendrons l'entretien de tantôt. Notre siècle est meilleur qu'on ne (4) dit. Adieu têtu.

4. (1) Should not *même* have an *s*? (2) Parse *sût*. (3) Parse *puissé-je*; why is there an accent over the *e*? (4) Why is *ne* used?

5. Write in full the Preterite definite and the Present and the Past of the Subjunctive of the verbs *Aller, Fuir, Dire.*

6. Translate the sentences: I will ask my father; I will ask for my father. I never met with him. Do you enjoy good health? Explain the different complements those verbs take in English and in French.

7. Translate: *parce que, par ce que, au travers, à travers, en travers, de travers, à tort et à travers.*

8. *Translate*:—To lay up something for a rainy day To experience a great many hardships. His happiest days are over. To put the cart before the horse. A bird in the hand is worth two in the bush. Il a mis son bonnet de travers. En forgeant on devient forgeron. J'y perds mon latin. Il n'est pire eau que l'eau qui dort.

9. Name the two principal languages into which the Romanic language became divided. Where did they flourish?

10. Relate the commencement of the Drama in France.

11. Give a sketch of the lives of Ronsard, Malherbe, Calvin, J. J. Rousseau, Mme de Sévigné. Name some of their writings.

12. Who were the authors of: *L'Enéide travestie; Le Festin de Pierre; Le Discours sur l'histoire universelle; Les Essais; La Vie de Pantagruel; Les Provinciales la Henriade?*

13. Translate into French:—

"Nothing," replied the artist, "will ever be attempted, if all possible objections must be first overcome. If you will favor my project, I will

try the first flight at my own hazard. I have considered the structure of all volant animals, and find the folding continuity of the bat's wings most easily accommodated to the human form. Upon this model I shall begin my task to-morrow, and in a year expect to tower into the air beyond the malice and pursuit of man. But I will work only on this condition, that the art shall not be divulged, and that you shall not require me to make wings for any but ourselves."

Why, said Rasselas, should you envy others so great an advantage? All skill ought to be exerted for universal good, every man has owed much to the others, and ought to repay the kindness that he has received.

DR JOHNSON, RASSELAS, *Chap.* VI.

THIRD YEAR.

FRENCH.

THURSDAY, APRIL 17TH: — MORNING, 9 TO 12.

Examiner,..... .....P. J. DAREY, M.A.,LL.D.

1. Traduisez en anglais:

Nicomède.— La raison et le temps m'ouvrent assez les yeux.
Et l'âge ne fera que me les ouvrir mieux.
Si j'avais jusqu'ici vécu (1) comme ce frère.
Avec une vertu qui fut imaginaire
(Car je l'appelle ainsi quand elle est sans effets;
Et l'admiration (2) de tant d'hommes parfaits
Dont il a vu dans Rome éclater le mérite,
N'est pas une grande vertu si l'on ne les imite);
Si j'avais donc vécu dans ce même repos
Qu'il a vécu dans Rome auprès (3) de ses héros,
Elle me laisserait la Bithynie entière,
Telle que de tout temps l'aîné la tient d'un père,
Et s'empresserait moins à le faire régner,
Si vos (4) armes sous moi n'avaient rien su gagner.
Mais parce qu'elle voit avec la Bithynie
Par trois sceptres conquis trop de puissance unie
Il faut la diviser, et dans ce beau projet,
Ce prince est trop bien né pour vivre mon sujet!
Puisqu'il peut la servir à me faire descendre.
Il a plus de vertu que n'en eut Alexandre.
Et je lui dois quitter, pour le mettre en mon rang,
Le bien de mes aïeux, ou le prix de mon sang.
Grâces aux immortels, l'effort de mon courage
Et ma grandeur future ont mis Rome en ombrage,
Vous pouvez l'en guérir, Seigneur, et promptement;
Mais n'exigez d'un fils aucun consentement;
Le maître qui prit soin d'instruire ma jeunesse (5)
Ne m'a jamais appris à faire une bassesse.

NICOMÈDE *Ac.* II., *Sc.* III.

K

2. (1) Ecrivez une personne de tous les temps de ce verbe.

(2) Ecrivez les mots sous entendus ici.

(3) Quelle différence y a-t-il entre *auprès* et *près* ?

(4) Quelles armes ?

(5) Qui était ce maître ?

3. Faites connaître au long les 5 principaux personnages de la tragédie de Nicomède. Décrivez leurs caractères.

4. *Traduisez :* — La pendule retarde toujours, je crois que le pendule est trop long. Voyez-le, il court à toutes jambes. Qui ne dit mot consent. C'est un nom de guerre, je crois. Prenez-le à l'écart, et parlez-lui-en. Il fait le chien couchant auprès de ses maîtres, c'est un hypocrite. Vous mettez toujours la charrue devant les bœufs. Nous entamerons ce sujet là quand bon vous semblera. Cette demoiselle ne joue pas en mesure c'est dommage. The towel hangs over the water-jug. I know he has the habit of looking at everything on the bright side. He rewarded me for my attention by reading to me a few lines from my favorite author. I allowed myself to follow the current of my thoughts, without endeavoring to study or examine them. He wishes to follow a calling that will permit him to assist his family.

COGERY THIRD *French Course.*

5. Translate :— "Sir," said the princess, "an evening walk must give to a man of learning like you pleasures which ignorance and youth can hardly conceive. You know the qualities and the causes of all that you behold, the laws by which the river flows, the periods in which the planets perform their revolution. Everything must supply you with contemplation and renew the consciousness of your own dignity" "Lady," answered he, "let the gay and the vigorous expect pleasure in their excursions ; it is enough that age can obtain ease. To me the world has lost its novelty ; I look round, and see what I remember to have seen in happier days. I rest against a tree, and consider that in the same shade I once disputed upon the annual overflow of the Nile with a friend who is now silent in the grave. I cast my eyes upwards, fix them on the changing moon, and think with pain on the vicissitudes of life. I have ceased to take much delight in physical truth ; for what have I to do with those things which I am so soon to leave.

JOHNSON, RASSELAS, *Chap. XLX.*

6. Faites connaître le caractère de la littérature française sous le 1er empire. Nommez six auteurs de cette période, et leurs ouvrages.

7. Quand est-ce que commença le *romantisme* dans la littérature française Citez cinq auteurs qui appartiennent à cette école.

8. Citez les principaux ouvrages de Lamartine, Chateaubriand, Casimir Delavigne, Alfred de Musset, Mignet, Lamenais, Villemain.

9. Qui est-ce qui a écrit: *les Trois Mousquetaires; du Vrai du Beau et du Bien; Les Paroles d'un croyant; l'Histoire de dix ans; l'Histoire du Consulat et de l'Empire*?

B.A. ORDINARY EXAMINATION.

FRENCH.

THURSDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiners,..... { PROF. P. J. DARBY, M.A., LL.D.; REV. CHARLES TANNER.

1. Translate :—

Irospe. Seigneur, de tous côtés le peuple vient en foule
De moment en moment votre garde s'écoule,
Et suivant les discours qu'ici même j'entends,
Le prince entre mes mains ne sera pas longtemps ;
Je n'en puis plus répondre.

Prusias. Allons, allons, le rendre,
Ce précieux objet d'une amitié si tendre.
Obéissons, Madame, à ce peuple sans foi,
Qui, las de m'obéir, en veut faire son roi,
Et du haut d'un balcon, pour calmer la tempête,
Sur ses nouveaux sujets faisons voler sa tête.

Attale. Ah, seigneur !

Prusias. C'est ainsi qu'il lui sera rendu ;
A qui le cherche ainsi, c'est ainsi qu'il est dû.

Attale. Ah ! seigneur, c'est tout perdre, et livrer à sa rage
Tout ce qui de plus près touche votre courage,
Et j'ose dire ici que Votre Majesté
Aura peine elle-même à trouver sûreté.

CORNEILLE, NICOMÈDE, *Acte V., Sc. V.*

2. Faites connaître, aussi bien que vous pourrez le faire, les différents personnages de la tragédie Nicomède.

3. Quelle est la grande idée de Corneille dans cette tragédie ?

4. Traduisez :—

" Pour avoir tant vécu chez ces cœurs magnanimes,
Vous en avez bientôt oublié les maximes."

" Arrêter un vainqueur *en tête* d'une armée." Au lieu de *en tête*, que dirait-on aujourd'hui ? Et quand dit-on en tête ?

" Vous pouvez cependant faire munir ces places."

" Les plus rares exploits que vous ayez pu faire
N'ont jeté qu'un dépot sur la tête d'un père."

" Je ne sais si l'honneur eut jamais un faux jour."

" J'avais mis bas, avec le nom d'aîné,
L'avantage du trône où je suis destiné.

5. Donnez un aperçu de la vie de Cuvier, Dumas père, Benj. Constant, Lamartine, Béranger.

Faites connaître les principaux écrits de ces auteurs.

6. Qui sont les auteurs de : *la Rivalité de François* 1*er. et Charles Quint ; l'Eloge de Vauvenargues ; l'Histoire des Gaulois ; l'Histoire de la civilisation en Europe ; l'Ecole des Vieillards ; le Combat de la Sérieuse ; Louis XVII ; les Soirées de Saint Pétersbourg ?*

7. Traduisez en anglais :—Si vous n'avez que faire de ce livre, prêtez-le-moi. Bon an mal an, cette ferme me rapporte deux mille huit cent quatre-vingts francs. Vous réussissez en tout, vous êtes né coiffé. C'est sa marotte, mettez-le sur ce chapitre, vous verrez qu'il n'en finira plus. Ces bottes vous chaussent bien. Chacun pour son écot, comme cela vous n'y trouverez rien à redire. Il aime à se faire prier. Il veut toujours faire à sa tête partout où il est.

Et en français :—

This is a spot from which we ought to see the whole valley. Who knows, indeed, that he will not make his fortune in that journey. Willing or unwilling, we must go to-morrow. This change of position was not long before it showed itself. He was left entirely to himself. In whatever society this gentleman may be, he takes the lead in the conversation. He could not stand it any longer, he was quite out of patience. He can do what he likes with it, I don't care for it. The poor old man is quite in his dotage. I think he is nearly related to him. I wish you wouldn't use my pen. That business does not suit me ; I wish to give it up. You wish to impose too much upon my credulity. If he does so it is for a good reason. You were within a very little of falling.

COGERY, *Third French Course.*

8. Traduisez en français :—

Plato, a philosopher with the soul of a poet, died in the year 347 before Christ. Plutarch was writing at the close of the first century after Christ, and in his paralled Lives of Greeks and Romans, the most famous of his many writings, he took occasion to paint an ideal Commonwealth as the conception of Lycurgus, the half mythical or all mythical Solon of Sparta. To Plutarch's Life of Lycurgus as well as to Plato, Thomas More and others have been indebted for some part of the shaping of their philosophic dreams.

The discovery of the New World at the end of the fifteenth century followed hard upon the diffusion of the new invention of printing, and came at a time when the fall of Constantinople by scattering Greek scholars, who became teachers in Italy, France and elsewhere, spread the study of Greek, and caused Plato to live again. Little had been heard of him through the Arabs, who cared little for his poetic method. But with the revival of learning he had become a force in Europe, a strong aid to the Reformers. *Morley's, Ideal Commonwealths.*

GERMAN.

FIRST YEAR.

MONDAY, MARCH 31st.

Examiner..... P. TOEWS, M. A.

I. Translate:—

Aber der Schnee lag noch auf den Bergspitzen und in den Schluchten, und ein kalter Abendwind wehte über die Flur, als die Sonne hinunterſank. Da ſchauderte das Veilchen zuſammen und ſprach: „Warum muß ich ſchon ſterben, da ich eben zu leben meinte?"

Und der Geiſt der Blumen, der unſichtbar da ſtand, antwortete:

„Warum ſtrebteſt du mit deinem zarten Leben ſo früh in die rauhe Zeit hinaus? Ein ſchwaches Geſchlecht muß untergehen im Froſt und Sturm. Wenn du aber nun dein kleines Haupt niederlegſt im Hauche der Nacht, will ich dich in den Schooß deiner Mutter zurückbringen, wo deine Geſchwiſter noch ſchlafen. Froſt und Stürme vergehen, doch das Leben verbirgt ſich nur und kehrt wieder."

Aloys Schreiber.

1. Give the principal parts of lag, hinunterſank, untergehen, verbirgt
2. Accent Bergſpitzen, Abendwind, niederlegſt, zurückbringen, vergehen.
3. Give the plural of Flur, Geiſt, Geſchlecht, Haupt, Nacht.
4. Distinguish between legen, ſtellen, ſetzen.

II. Translate:—1. I became tired (müde) because I was rowing (rudern) against the stream (Strom. m). 2. Whose regiments has the king blamed? (tadeln). 3. Are you satisfied (zufrieden) with this book? 4. He says these are the horses, for which he has not paid him yet. 5. There are three glasses (Glas. n.). on the table. I go (reiſen) to France twice a year. 7. He shook (ſchütteln) his head.

III. Give the names of the days of the week in German.

IV. State the gender of stones and metals.

What gender is Stahl?

V. What cases do the following prepositions govern: durch, bei, nach, für, ohne, außer, um, wider.

VI. Translate:—The postman (Poſtbote) has brought me the news (Nachricht, f.) for (auf) which I was waiting (warten) 2. The gentleman

whose book you sent me, was at the concert yesterday. 3 The man in whose house we lived, is our neighbour. 4. He has told me what he wishes. 5. Have you all you need? (brauchen). 6.I believe (glauben) I know the man who is in front of (vor) the house. 7. What do you generally (gewöhnlich) do with the newspapers which you no longer need? 8. What are you thinking of? (an). 9. Has the servant brought the book home, which I bought yesterday at the bookseller's (Buchhändler) 10. The lady, whose little daughter visited us, has gone (reisen) home. 11. He has sent it to you, has he not? 12. Have they sent him that?

VII. Decline throughout in German—Sick child, high wall, (Mauer, f.) beautiful broad (breit) stream, young woman, lazy (faul) horse, n. my new (neu) hat, Hut, m.), a good pen (Feder, f.), the large glass (Glas, n.)

INTERMEDIATE EXAMINATION.

GERMAN.

March 31st.

Examiner.....P. Toews, M.A.

I. Translate:—

„Ja, Gott ist allgegenwärtig," erwiderte der Rabbi, „aber er ist unsichtbar; kein sterbliches Auge vermöchte den Glanz seiner Herrlichkeit zu ertragen."

Der Kaiser lächelte mit ungläubiger Miene. „Nun denn!" fuhr Josua fort, „so versuche zuvor, dem Herold und Gesandten Gottes in's Auge zu schauen!" Da bat ihn der Rabbi, sich dem hohen Fenster des Saales zu nähern, das nach Süden auf einen freien Platz hinausging. „Blicke hier hinaus, erhabener Kaiser!" so sprach er; „dort oben prangt die Sonne eben im Mittagsglanze; sieh ihr nur einen Augenblick in das strahlende Antlitz!"

„Nimmermehr!" entgegnete der Kaiser; „ich setze mich ja der Gefahr aus, für immer zu erblinden."

„Wie!" sprach jetzt der Rabbi, „dein Auge verträgt nicht einmal den Glanz des Geschöpfes, und dennoch begehrst das, das Angesicht des Schöpfers von Auge zu Auge zu schauen? Wahrlich, wir

würden beide alsbald von seiner Glorie vernichtet, wenn er sich jetzt unsern sterblichen Blicken darstellte."

Aus Seinecke's *Lesebuch.*

1. Parse :—vermöchte, Süden, darstellte.

2. Give the plural of Herold, Saal, Antlitz,

3. Distinguish between Angesicht and Gesicht.

4. Give the principal parts of ertragen, fuhr, bat, hinausging, sprach.

5. Accent :—allgegenwärtig, unsichtbar.

II. Translate into German :—1. What kind of wood (Holz) have you bought? 2. He said he had arrived (angekommen) the day before yesterday. 3. The gentleman whose acquaintance (Bekanntschaft) I wish to make, will be here to-morrow. 4. I was thinking of (an) the story (Geschichte) which you told me a week ago, and I laughed very much at (über) it. 5. Why is this boy not believed? (glauben with dative) 6. When will his horses be sold?

III. Decline throughout in German :—That high tree; this beautiful large garden; which tired (müde) boy.

IV. Translate :—Whose gloves have you? I have mine and yours. 2. To whom were you writing the long letter yesterday? 3. For whom are these new books? 4. He says he has been two weeks in this city. 5. This is my neighbour of whom you have already heard so much. 6. The gentleman whom we met this morning on the way (Weg, m.) to the university told me he was a physician (Arzt). 7. What has become of my German grammar? 8. I was told the patient (Kranke) was a little better. 9. If he is not better to-morrow than he is to-day, he will not be permitted [erlauben, with dat.] to go out.

V. Give the names of the months.

VI. Decline :—ein solches Buch; solch eine Blume; solch guter Wein; Solche gute Tinte; derselbe Mann.

VII. Translate :—1. Are these the books for which you have not paid him yet? 2. You will be at my sister's this evening, will you not?

THIRD YEAR.

GERMAN.

MONDAY, MARCH 31ST.

Examiner,.....P. TOEWS, M.A.

I. Translate :—

Werner. Mensch, ich glaube, du liefest ebenso wenig die Zeitungen als die Bibel.—Du kennst den Prinz Heraklius nicht, den braven Mann nicht, der Persien weggenommen und nächster Tage die ottomanische Pforte einsprengen wird? Gott sei Dank, daß doch noch irgendwo in der Welt Krieg ist! Ich habe lange genug gehofft, es sollte hier wieder losgehen. Aber da sitzen sie und heilen sich die Haut. Nein, Soldat war ich, Soldat muß ich wieder sein! Kurz—(indem er sich schüchtern umsieht, ob ihn jemand behorcht) im Vertrauen, Just; ich wandere nach Persien, um unter Sr. Königlichen Hoheit, dem Prinzen Heraklius, ein paar Feldzüge wider den Türken zu machhen.

Just. Du?

Werner. Ich, wie du mich hier siehst! Unsere Vorfahren zogen fleißig wider den Türken und das sollten wir noch thun, wenn wir ehrliche Kerls und gute Christen wären. Freilich begreife ich wohl, daß ein Feldzug wider den Türken nicht halb so lustig sein kann als einer wider den Franzosen; aber dafür muß er auch desto verdienstlicher sein, in diesem und in jenem Leben. Die Türken haben dir alle Säbels mit Diamanten besetzt.

Lessing, Minna von Barnhelm.

1. Correct the following words: den Prinz, Kerls, Säbels.

2. Nächster Tage: Give others examples of the adverbial use of the Genitive.

3 State the difference between paar and Par.

4. Die Türken haben dir alle Säbels mit Diamanten besetzt. Write a note on dir.

5 Accent: einsprengen, losgehen, umsieht, Vorfahren.

II. Translate:

Der fehlgeschlagene Versuch auf das Fort Lillo veränderte die Maßregeln des Herzogs von Parma. Da es auf diesem Wege nicht gelingen wollte, die Schiffahrt auf der Schelde zu hindern, wovon doch der ganze Erfolg der Belagerung abhing, so beschloß er den Strom durch eine Brücke gänzlich zu sperren. Der Gedanke war kühn, und Viele waren,

die ihn für abenteuerlich hielten. Sowohl die Breite des Stroms, welcher in diesen Gegenden über zwölfhundert Schritte beträgt, als die reißende Gewalt desselben, die durch die Fluth des nahen Meeres noch verstärkt wird, schienen jeden Versuch dieser Art unausführbar zu machen; dazu kam der Mangel an Bauholz, an Schiffen, an Werkleuten, und dann die gefährliche Stellung zwischen der Antwerpischen und Seeländischen Flotte, denen es ein Leichtes sein mußte in Verbindung mit einem stürmischen Element, eine so langwierige Arbeit zu stören.

Schiller, Die Belagerung von Antwerpen.

1. Gelingen: Translate: I have succeeded in finding them.

2. State the gender of Maßregel, Gegend, Schritt, Bauholz, and give the plural of Meer.

3. Give the principal parts of abhing.

III. Translate:—1 The whole of England is not so large as the Province of Manitoba. 2. The sick man lay seven weeks in the hospital, but now he has recovered (genesen). 3. Have you forgotten what I told you two weeks ago? 4. Please tell me what time it is 5. It is exactly thirteen minutes after eleven. 6. Between April and September the little tree grew a foot and a half. 7. Is your watch fast or slow?

IV. State the difference between: Kennen Sie die Straße? and Wissen Sie die Straße?

V. Translate: 1. My father could have sold his house last year but now it is impossible for nobody wants to buy it. I should like to read this French book; but I do not know any French. 3. He will be obliged to study another year if he does not pass his examination. 4. You ought to have asked him for the letter. 5. Will you be permitted to go to meet him? I should have liked to see your brother. 7. This house is said to have cost four thousand dollars, but I should not like to give two thousand for it.

VI. When are the numbers zwei and drei declined? When are the others declined?

LITERATURE.

I. Name the principal Minnesingers of the Suabian era.

II. Briefly characterize the poetry of the Mastersingers.

III. Name the greatest national epic of the Middle High German period.

IV. Give a brief account of the contest between Gottsched and Bodmer.

B.A. ORDINARY EXAMINATION.

GERMAN.

MONDAY, MARCH 31ST.

Examiner..... P. TOEWS, M.A.

I. Translate:—

Ihm war zu Muthe, als gäbe es keine Welt mehr jenseit dieser umgebenden Fluthen, oder als könne man doch nie wieder da hinüber zur Vereinigung mit andern Menschen gelangen; und wenn ihn auch bisweilen sein weidendes Roß anwieherte, wie nach Ritterthaten fragend und mahnend oder sein Wappenschild ihm von der Stickerei des Sattels und der Pferdedecke ernst entgegen leuchtete, oder sein schönes Schwerdt unversehens vom Nagel, an welchem es in der Hütte hing, herab fiel, im Sturze aus der Scheide gleitend,—so beruhigte er sein zweifelndes Gemüth damit: Undine sei gar keine Fischers-Tochter, sei vielmehr, aller Wahrscheinlichkeit nach, aus einem wundersamen hochfürstlichen Hause der Fremde gebürtig. Nur das war ihm in der Seele zuwider, wenn die alte Frau Undinen in seiner Gegenwart schalt. Das launische Mädchen lachte zwar meist, ohne alles Hehl, ganz ausgelassen darüber; aber ihm war es, als taste man seine Ehre an, und doch wußte er der alten Fischerin nicht Unrecht zu geben, denn Undine verdiente immer zum wenigsten zehnfach so viel Schelte, als sie bekam, daher er denn auch der Hauswirthin im Herzen gewogen blieb, und das ganze Leben seinen stillen, vergnüglichen Gang fürder ging.

Fonqué, Undine.

1. Give the gender and plural of Welt, Roß, Gemüt, and state the difference between Schilde and Schilder.

2. Accent: umgebenden, anwieherte, unversehens.

II. Translate:—

Max.

Was gibt's aufs neu denn an ihm auszustellen?
Daß er für sich allein beschließt, was er
Allein versteht? Wohl! daran thut er recht,
Und wird's dabei auch sein Verbleiben haben.
Er ist nun einmal nicht gemacht, nach andern
Geschmeidig sich zu fügen und zu wenden,
Es geht ihm wider die Natur, er kann's nicht.
Geworden ist ihm eine Herrscherseele,
Und ist gestellt auf einen Herrscherplatz.

Wohl uns, daß es so ist! Es können sich
Nur wenige regieren, den Verstand
Verständig brauchen. Wohl dem Ganzen, findet
Sich einmal einer, der ein Mittelpunkt
Für viele Tausend wird, ein Halt; sich hinstellt,
Wie eine feste Säul', an die man sich
Mit Lust mag schließen und mit Zuversicht.
So einer ist der Wallenstein, und taugte
Dem Hof ein andrer besser,—der, Armee
Frommt nur ein solcher.

Questenberg.

Der Armee! Ja wohl!

Max.

Und eine Lust ist's, wie er alles weckt
Und stärkt und neu belebt um sich herum,
Wie jede Kraft sich ausspricht, jede Gabe
Gleich deutlicher sich wird in seiner Nähe!
Jedwedem zieht er seine Kraft hervor,
Die eigenthümliche, und zieht sie groß,
Läßt jeden ganz das bleiben, was er ist;
Er wacht nur drüber, daß er's immer sei
Am rechten Ort: so weiß er aller Menschen
Vermögen zu dem seinigen zu machen.

Schiller, Wallenstein.

1. Tausend. When are the numbers zwei and drei declined? When are the others declined?

2. Write a note on Ort.

III. Translate:

XXXI. "When I was going from my house at Enfield to the India House one morning," says Charles Lamb, "I met Coleridge on his way to pay me a visit. He was brimful[1] of some[2] new idea, and —in spite of[3] my telling him that my time was precious[4]—he drew me into the door of an unoccupied[5] garden by the roadside[6] and there—sheltered by an evergreen hedge[7] from observation,[8] —*he* took[12] me by the button of my coat,[13] closed[14] his eyes and commenced an enthusiastic[15] discourse,[16] waving[17] at the same time[18] his right hand gently,[19] as[20] the musical[21] words flowed in an unbroken[22] stream[23] from his lips. I listened[24] entranced[25]; but the striking[26] of a church clock recalled[27] me to *a sense of* my

duty.[28] I saw it was of no use to attempt to break away[29]; so[30] I took advantage of[31] his absorption[32] in his subject, [33] quietly[34] cut off the button from my coat with my pen-knife[35] and decamped.[36] As I was passing[37] the same garden five hours afterwards on my way home,[38] I heard Coleridge's voice, looked in,[39] and—there he stood, with closed eyes, the button in his fingers, gracefully waving his right hand, just as *when* I had left[40] him. He had never[41] missed[42] me."

[1] übervoll' von. [2] irgend ein. [3] trotzdem daß. [4] kostbar. [5] unbenutzt. [6] Landstraße. [7] schützen. [8] durch. [9] immergrün. [10] Hecke. [11] Beobachtung. [12] fassen. [13] Rockknopf. [14] schließen, [15] begeistert. [16] Rede. [17] hin und her bewegen. [18] wobei. [19] anmutig ('gracefully'). [20] während. [21] wohltönend [22] unaufhaltsam. [23] Strom. [24] zuhören. [25] entzückt. [26] Schlagen, [27] erinnern an [28] Pflicht, [29] "saw (erkennen) the uselessness (Nutzlosigkeit) of an attempt to break away (sich losreißen)." [30] deshalb. [31] benutzen (*trans.* "it that he was absorbed (völlig versunken in [33] Gegenstand, *m.* [34] ruhig. [35] Federmesser, *n.* [36] Reißaus nehmen. [37] vorbeikommen an [38] Heimweg. [39] hineingucken. [40] verlassen. [41] gar nicht. [42] vermissen.

LITERATURE.

I. State Klopstocks influence on German literature.

II. Characterize the writings of Wieland.

III. What was the tendency of the men of „Sturm and Drang."

IV. Explain the term romantic as used by German critics and literary historians.

V. Name the authors of the following works: Laokoon Don Carlos Herrman und Dorothea.

HEBREW.

ELEMENTARY COURSE.

MONDAY, 31ST MARCH :—9–12.

Examiner, ... PROF. COUSSIRAT. B.A.B.D. OFF. D'Ac.

1. (*a*) Translate לְהָאִיר.....וַיִּתֵּן אֹתָם—(*b*) Parse fully these words.—(*c*) Explain the presence of the Daghesh in ת and of the ֫ under הָ.—(*d*) Render into Hebrew: God gave the light to man.

2. (*a*) Translate— וְאֵד יַעֲלֶה מִן־הָאָרֶץ וְהִשְׁקָה אֶת־כָּל־ פְּנֵי הָאֲדָמָה׃

(*b*) Parse fully the verbs and nouns in that sentence.—(*c*) Explain the vowels in יַעְלֶה (*d*) Why is נ in מִן not assimilated?—(*e*) Give the names and show the use of the accents in the same sentence.

3. (*a*) Translate—הַמְיַשֵּׁל אֱלֹהִים אֶת־הָאָדָם בִּרְגַת הַיָּם וּבוֹהּ הַשָּׁמָיִם

(*b*) Give a tabular view of מְיַשֵּׁל in Kal, Niphal and Hiphil.
(*c*) Account for ־ in בִּרְגַת, and for וֹ in וּבוֹהּ

4. (*a*) Translate— "זֶה הַיּוֹם הַשְּׁבִיעִי אֲשֶׁר־בּוֹ שָׁבַת אֱ

(*d*) Give the plural and dual of יוֹם—(*c*) What is the rule of זֶה הַיּוֹם?

5. Write a paradigm of שִׁיר

6. Translate into Hebrew: (1) The heavens will be finished.–(2) I knew that thou art good.—(3) He said to the sea-monsters, Fill ye the seas.—(4) The sun will be seen in the heavens.

7. Point and translate the following:

ויטע יהוה אלהים גן בעדן מיהדם ויישם שם את האדם אשר יצר׳

8. What are the vowels of the segholates?

9. Give the characteristics of various stems.

10. Oral Examination: Reading the pointed and unpointed text of Genesis.

INTERMEDIATE EXAMINATION.

MONDAY, 31ST MARCH.—9-12.

Examiners,..... { PROF. D. COUSSIRAT B.A.B.D. OFF.D'Ac. PROF. WEIR L.L.D.

1. Translate:—*a*) Exodus XX, 18–26 inclusive.
(*b*,) Deuteronomy XXXII, 24–29 inclusive.

2. Parse fully the following words from the above extracts: (1) רָאִים. (2) וִירָא. (3) וְנִגְעוּ (4) תִּירָאוּ (5) נְסוֹת. and (6) וְנִשְׁכְּיָה explain the ; under the כְּ and the ה at the end of נִשְׁכִּיָּה (7) נִגַּשׁ (8) אִזְכִּיר (9) בְּהֵמֹת׳

3. (*a*) Insert vowel points in יד, רגלם, עבדיו, הר, עם

(*b*) Insert the article to ארץ, הר.—(c) Give their plural with article prefixed.

4. Write out the tabular view of the Kal and Niphal of לָקַח

5. Translate stating the principle of Syntax illustrated by each sentence:

(1) כִּי יֹדֵעַ אֱלֹהִים (2) וְעָתָה פֶּן יִשְׁלַח יָדוֹ וְלָקַח וְאָכַל וָחַי (3) הֲלוֹא אִם תֵּיטִיב שְׂאֵת

6. Render into Hebrew: (1) We found in the field the fruit which God commanded not to eat. (2) Six days thou shalt labor and do all thy work—(3) This good book was given to me.

7. Explain the force of the numerals 3–10 with feminine nouns, with masculine nouns.

8. Render into Hebrew: (1) He killed him. (2) He will kill me. (3) The killing of me. (4) To kill me. (5) He has caused to kill him

9. Point and translate the Masoretic note at the end of Exodus,—to כ"ט

10. Oral Examination Reading.

ADVANCED COURSE.

MONDAY, 31ST MARCH :— 9 TO 12.

Examiner, ... PROF. D. COUSSIRAT B.A.B.D. OFF. D'AC.

I. Translate :—

(*a*) Ps. VIII 1--6 to תְּפָקְדֶנּוּ

(*b*) Is : VII 21--25

II. Parse fully from the above passages:

(1) שִׁמְךָ (2) תְּנָה (3) יִסַּרְתָּ (4) צוֹרְרֶיךָ (5) לְהַשְׁבִּית (6) וּמִתְנַקֵּם (7) מַעֲשֵׂה (8) יִחְיֶה (9) שׁוֹר

[With pl. abs and Const.

III. Insert the vowel points in Masoretic note either at the end of the Psalms or of Isaiah and translate.

IV. Explain fully ק"ת

V. State (1) the uses of the Infinitives absolute and construct.
(2) The force and meaning of הֵיטֵיב and הַרְבֵּה.

(3). Use of the participle.

VI. Render into Hebrew :

(1) Hear me when I call, O God of my righteousness.
(2) Have mercy upon me, OLord, for I am weak.
(3) All we like sheep have gone astray.

VII. (1) Explain the reason for the vav cholem before the ffirmatives in certain persons and species of verbs Ayn double and Ayn vav. (2) Distinguish between the Piels of such verbs.

VIII. State the causes of the changes of vowels.

IX. What is the subject of תָּשִׂים in Isaiah LIII, 10?

X Oral Examination : Reading.

NATURAL SCIENCES.

FIRST YEAR.

CHEMISTRY.

TUESDAY, APRIL 15TH :—MORNING, 9 TO 12.

Examiner, ...B. J. HARRINGTON, B.A., PH.D.

1. What are crystals? How are they formed? Name the systems into which they are grouped?

2. How does Fluorine occur in nature? How may it be isolated?

3. What volume of Hydrogen Sulphide at 18° C. and 740 mm. can be obtained by acting upon 40 grams of Ferrous Sulphide with Hydrochloric Acid?

4. How is Marsh Gas prepared and what are its properties? To what series does it belong? What is the general formula of the series?

5. Give four tests for the detection of Iodine when in combination.

6. What are the chief characteristics of base-forming elements?

7. What are the principal sources from which salts of Potassium and Sodium are derived?

8. Name the principal kinds of glass, and state what you know with regard to their composition.

9. How are the relative weights of atoms determined?

10. Write equations indicating the changes that take place in any two of the following cases:—(*a*) when Calcium Carbonate is dissolved in Nitric Acid, (*b*) when Sulphuric Acid acts upon Manganese Dioxide, (*c*) when Copper and Sulphuric Acid are heated together.

INTERMEDIATE EXAMINATION.

BOTANY.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner,.....D. P. PENHALLOW, B.Sc.

1. Trace the course of the sap from the roots to the centres of growth, and show what changes it undergoes.

2. Show what conditions determine the flow of sap.

3. State how a bud is constructed, and show what provision is made for protection of internal parts.

4. Explain what is meant by the venation of a leaf, and show how many types there are.

5. Explain the internal differentiations of the leaf parenchyma and their functional adaptations.

6. Explain fully and by chemical equations, the function of respiration.

7. Compare the growth of the pollen grain in Gymnosperms and Angiosperms.

8. Give a concise statement of the structure of the pistil in Angiosperms and Gymnosperms.

9. Explain the law of Phyllotaxis; show what is expressed by the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{5}$, etc., and how they may be determined.

10. Explain the terms *pericarp*, *carpophylla*, *placenta*, *suture* (dorsal and ventral) *putamen*.

THIRD YEAR AND SECOND YEAR APPLIED SCIENCE.

ZOOLOGY.

TUESDAY, APRIL 15TH:—AFTERNOON 2 TO 5

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. Define one of the classes of each of the Provinces *Protozoa* and *Cœlenterata*, and give characteristic examples.

2. Into what groups may the Province *Echinodermata* be divided, and on what grounds?

3. Define the class *Brachiopoda*, and mention some recent and fossil families.

4. Describe fully the structures of any animal of the class *Lamellibranchiata*, or the class *Cephalopoda*.

5. Describe fully any animal of the class *Annelida*.

6. Define the class *Crustacea*, and state its leading sub-divisions. Give examples of each, recent and fossil.

7. Describe the external parts and the metamorphosis of an Insect.

8. What are the distinctive characters of the classes *Pisces*, *Amphibia Reptilia*, *Aves*?

9. Characterize the class *Mammalia*, and state the distinctions of its leading sub-divisions, with examples.

10. Describe and illustrate by examples any class of the animal kingdom not referred to in the previous questions.

11. Describe, and refer to their provinces and classes, the specimens exhibited.

VEGETABLE HISTOLOGY.

FOURTH YEAR.

THURSDAY, APRIL 3RD:—MORNING, 9 TO 12.

Examiner,..... .... D. P. PENHALLOW, B.Sc.

1. Compare the stomata in Marchantiaceæ, Bryaceæ and Filices as to structure and distribution.

2. Trace the development of the ovum in *Polytrichum* to the commencement of the sexual generation.

3. Compare the fructification of *Polytrichum*, *Equisetum*, *Aspidium*, *Lycopodium* and *Selaginella*. Show the character of the Sporangium, the kinds of spores produced, and the particular generation to which they belong.

4. Trace the development of a spore in *Asplenium* to completion of the sexual generation.

5. Show in what essential respects the Pteridophytes approach the Spermaphytes, and through what families the connection is established.

6. Compare the stem structure of a *Bryophyte* and a fern.

7. Establish the relative positions of *Filices*, *Equisetaceæ* and *Lycopodiaceæ*.

8. Compare the root system of the Bryophytes and Pteridophytes in both generations of growth.

B.A. ORDINARY EXAMINATION

AND THIRD YEAR APPLIED SCIENCE.

MONDAY, APRIL 14TH:—AFTERNOON, 2 TO 5.

CHRONOLOGICAL GEOLOGY.

Examiners..... J. W. DAWSON, LL.D., F.R.S. / F. D. ADAMS, M.A. Sc.

1. State the distribution of the Laurentian and Huronian rocks in North America, and mention the distinctive lithological characters of one of them.

2. Describe the Erian or Devonian of Canada, and state how it is represented in Great Britain.

3. Explain the peculiarities of the Oriskany, Calciferous and Potsdam, with their geological relations and characteristic fossils.

4. How would you distinguish by fossils the Black River Limestone from the Helderberg, and this from the Corniferous?

5. State in order the Silurian Formations represented in Ontario, with their general geological distribution; or the portions of the geological scale of chronology represented in the Province of Quebec, with their general geographical distribution.

6. Describe the subdivisions of the Carboniferous in Nova Scotia, or of the Tertiary or Cainozoic in Western Europe.

7. State in tabular form the zoological or botanical and geological relations of *Favosites*, *Trigonia*, *Lepidodendron*, *Calamites*, *Productus*, *Dadoxylon*, *Baculites*, *Psilophyton*, *Paradoxides*, *Palæoniscus*, *Belemnites*, *Hipparion*, *Pliosaurus*.

8. Give some account of the Cretaceous and Laramie formations west of Manitoba.

9. State the normal succession of deposits in the Pleistocene of Canada and the climatal conditions indicated.

10. State the geological formations to which the fossils exhibited belong, and name the fossils.

A. ORDINARY EXAMINATION AND THIRD YEAR APPLIED SCIENCE.

GEOLOGY.

MONDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiners, ... { J. W. DAWSON, LL.D., F.R.S.
FRANK D. ADAMS, M. AP. SC.

. What do you understand by the terms Volcanic and Plutonic, Acid ad Basic, as applied to rocks? What are the component minerals of the owing rocks, and to which of the above classes do they belong:—anite, Diorite, Diabase, Trachyte, Phonolite, Basalt? What is a clastic ck?

. Describe briefly the products of Volcanic action. What great change ok place in Vesuvius during the eruption of A.D. 79? Mention any important historical events which occurred in connection with this eruption.

. Explain how it is possible to ascertain the character and composition of those igneous rocks which have solidified at great depths within the rth's crust.

Explain briefly the general action of aqueous and igneous forces spectively in shaping the earth's surface.

. What changes, chemical and mechanical, take place in a mass of anite during its decay? What are the resulting decomposition pro-ucts?

. What conditions determine the formation of Canons? Why, for instance, does the Colorado cut out a series of canons, while the Ottawa ns through a comparatively wide valley flanked by low hills?

. What do you understand by the terms Mature and Immature as plied to Drainage systems? Give examples. What is a Base Level of osion?

. Explain how we may obtain from rivers a rude measure of the rate of ntinental denudation.

. Describe briefly the influence of man as a geological agent.

0. Explain the following terms, illustrating your explanations by agrams: Anticlinal, Isoclinal, False Bedding, Unconformability, Lamina-ion.

. What is a fault? Describe the different kinds of faults, illustrating ur descriptions by diagrams.

3. Name the eight hand specimens, and state what structures are exhibited by Nos. 6, 7 and 8.

THIRD YEAR HONOURS IN NATURAL SCIENCE AND THIRD YEAR IN APPLIED SCIENCE (*Mining Course*).

MINERALOGY.

TUESDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiners, ... { SIR J. W. DAWSON, LL.D., F.R.S. / B. J. HARRINGTON, B.A., PH.D.

1. Explain the classification of crystal forms according to degree of symmetry.

2. What are the three types of crystal faces?

3. Enumerate the holohedral forms of the isometric system and give their symbols.

4. Give examples of minerals that frequently assume imitative shapes.

5. Explain hemihedry as occurring in the Monoclinic system, giving the notation of the faces.

6. What are the chief precautions to be observed in determining (*a*) the specific gravity and (*b*) the hardness of minerals?

7. Explain the use of Tourmaline in optical investigations.

8. Distinguish between (*a*) hemihedrism and hemimorphism, (*b*) pseudomorphism and paramorphism, (*c*) twinning proper and parallel grouping.

9. State what you know with regard to the classification of mineral species.

10. Explain each of the following terms:—Distortion, oscillatory combination, axis of revolution, tetartohedry, gyroidal.

11. Describe carefully each of the minerals and models exhibited.

B.A. HONOUR EXAMINATIONS IN GEOLOGY AND NATURAL HISTORY.

(FIRST PAPER) PETROGRAPHY.

TUESDAY, APRIL 1ST:—MORNING, 9 TO 1.

Examiners, ... { J. W. DAWSON, LL.D., F.R.S. / B. J. HARRINGTON, B.A., PH.D. / FRANK D. ADAMS, M. AP. SC.

1. Explain the terms Optic Axis, Crystallographic Axis and Elasticity Axis. How are the Crystallographic and the Elasticity Axes related to one another in minerals of the orthorhombic system?

2. What is Pleochroism? What is the highest degree of Pleochroism which it is possible for minerals of each of the six crystallographic systems respectively to exhibit?

3. In a thin section a certain mineral species is represented by a single isotropic grain of irregular shape. It is known to be either Garnet, Zircon, Tourmaline or Olivine, how is it possible to determine by means of its optical properties to which species it should be referred?

4. Draw out a scheme showing Rosenbusch's classification of the Plutonic rocks and their modern Volcanic equivalents.

5. Gneiss. Describe briefly.

6. Diorite and Liparite. Their essential and more commonly occurring accessory constituents. Their structure and subdivisions. Are they more or less acid than Limburgite?

7. Ordinary Pyroxene. How do the cleavages appear in sections parallel to O P, ∞ P $\bar{\infty}$ and ∞ P $\frac{1}{\infty}$? What are the positions of the elasticity axes with reference to the cleavages in each of these three sections?

8. What do you understand by the terms:—Clastic, Cataclastic, Phenocryst, Pseudospherulite and Microfelsite?

9. Name the ten hand specimens. What structures are exhibited by Nos. 8, 9 and 10.

10. Examine the four thin sections microscopically. In Nos. 1, 2 and 3 merely state what minerals are present and name the rock. In No. 4 name the rock and state its structure and component minerals, describing in full the optical properties of the various minerals on which you base your determinations.

B.A. HONOURS.

(SECOND PAPER) PRACTICAL GEOLOGY.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH. D.
FRANK D. ADAMS, M. AP. SC.

1. Explain how the geology of a country influences its scenery and determines its agricultural and mining resources. Give an example.

2. A coast line is formed by a range of Granite hills—on going inland these are found to be succeeded by a series of well bedded limestones. How would you decide whether:—

(*a*) The granite had been intruded through the limestones
(*b*) The limestones had been deposited upon the granite, or
(*c*) The two rocks had been brought together by a fault.

3. What facts serve to indicate the presence of a fault in cases where the actual line of fracture is covered up?

4. Explain the following terms as applied to mineral veins:—Horse, Iron Hat, Foot Wall, Banded, Drusy.

5. What is a stock-work? Mention a typical example.

6. What considerations must be taken into account in deciding whether an ore deposit can be profitably worked? Define the term "Ore." Is it correct to refer to Apatite as an ore?

7. The Comstock Lode. Its mineralogical character and stratigraphical relations. To what class of mineral deposits is it to be referred? How can its age be approximately determined

8. Alluvial Deposits. For what metals are they worked? From whence are the metals or ores found in such deposits derived? Mention any Canadian example.

9. Vertical and Horizontal Sections. The meaning of the terms. How are they constructed? Point out certain cases in which each is of especial value.

10. How would you examine a district in order to ascertain whether it contained any mineral deposits of value?

11. Explain the general principles which should govern the coloring of geological maps. What colors are used for the several geological systems in the maps of the Geological Survey of Canada? How are dips, strikes, anticlinals, faults, iron ores and gold ores indicated on geological maps?

B.A. HONOURS.

(THIRD PAPER) PALÆONTOLOGY.

FRIDAY, APRIL 11TH:—AFTERNOON, 2 TO 5.

Examiners,..... J. W. DAWSON, LL.D, F.R.S.
B. J. HARRINGTON, B.A., PH.D.
FRANK D. ADAMS, B.A.Sc.

1. State in tabular form the characters of the families of Brachiopods, and their range in geological time.

2. What are the characteristic differences of *Tabulata* and *Rugosa*, and the range of the principal genera in time.

3. Describe the parts of a typical Trilobite, and state the leading subdivisions of the group.

4. Indicate the relation of the orders of Fishes or Batrachians to geological time.

5. What are the characteristic differences of Nautilidæ, Orthoceratidæ and Ammomtidæ, and their range in time.

6. Describe the parts of a typical Crinoid or Cystidean.

7. State the classification and geological range of Sponges or Foraminifera.

8. Trace through the Lower Palæozoic any order of Invertebrates, stating the genera or species characteristic of particular formations.

9. A formation containing *Productus, Fenestella, Phillipsia* rests unconformably upon one holding *Dekelloccphalus, Diplograptus*, or *Paradoxides*, what may be inferred as to relative ages and intervening time?

10. State in tabular form the characteristic genera of Carboniferous Plants and their place in the Botanical system.

11. State what you know of *Eozoon, Murchisonia, Dictyonema, Cyrtodonta, Phyllograptus, Eurypterus*, and their geological relations.

2. Stlate the names and geological ranges of the specimens exhibited

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B.A. HONOURS AND B.A. Sc. (*Chemistry Course.*)

(FOURTH PAPER) MINERALOGY.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiners, ... { SIR J. W. DAWSON, LL.D., F. R. S.
B. J. HARRINGTON, B.A., PH. D.

1. What do you understand by isomorphous mixture in minerals? Give examples.

2. Explain the term habit as applied to minerals, and give several examples of the association of minerals in veins.

3. State what you know with regard to the optical anomalies exhibited by Garnet and Leucite.

4. Explain the division of the Micas into two orders.

5. Give the optical differences between Enstatite and Hypersthene.

6. Calculate the formulæ of two minerals whose analysis gave the following percentage compositions:—

(1) Sulphur 19.63, Antimony 25.68, Lead 41.38, Copper 12.68.

(2) Silica 43.13, Magnesia 42.05, Ferrous Oxide 0.37, Water 13.88

7. Give the composition and crystalline form of Titanite, Albite, Zircon, Rutile and Aragonite. How does twinning take place in each of these species?

8. State what you know with regard to the mode of occurrence of each of the following minerals:—Staurolite, Biotite, Prehnite, Serpentine, Apatite, Menaccanite.

9. Give the general characters of the Scapolites, and describe one member of the group.

10. Give the blowpipe characters of Apophyllite, Thomsonite, Topaz, Pyrargyrite and Millerite.

SPECIMENS:—Afternoon, 2 to 4.

Name the minerals exhibited, and give their characters as seen in the specimens.

B. A. HONOURS.

(FIFTH PAPER)—CANADIAN GEOLOGY (IN PART).

TUESDAY, APRIL 22ND:——MORNING, 9 TO 12.

Examiners,..... ..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.
F. D. ADAMS, M.A.Sc.

1. Define the natural regions into which Canada may be divided for geological purposes, and sketch shortly the Palæozoic Geology of the Arctic Region and of Newfoundland.

2. How may the Laurentian rocks of Canada be best divided into groups —state the Horizons of Eozoon, Graphite and Apatite, and the characters istic rocks of the Huronian in the typical district of Georgian Bay.

3. How is the Cambrian system represented in Canada in the Eastern coast region, and on the continental plateau. Characterize the important subdivisions locally and by fossils.

4. Explain the structure and mode of deposition of the gray Trenton limestone and of the Calciferous of the vicinity of Montreal, and the peculiarities of the geological structure of St. Helen's Island, in relation to age, fossils and the associated igneous rocks.

5. Draw a line of section from the Laurentian axis in Ontario to the western end of Lake Erie, indicate the formations cut by it and their geological relations, and describe one of the Palæozoic series, with its characteristic fossils, or

5*a*. Describe the mode of occurrence of any metallic mineral in any of the older formations of Canada.

6. Name the fossils exhibited, and state in what geological series and in what localities they might be collected.

B.A. HONOURS.

(SIXTH PAPER)—CANADIAN GEOLOGY (IN PART).

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiners,..... ..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.
F. D. ADAMS, M.A.Sc.

1. Indicate the differences between the Erian rocks of Gaspe and New Brunswick and those of Ontario. State the causes of the difference.

2. Describe the Coal Formation in Nova Scotia, stating its structure and distribution, and give in detail the mineral and fossil accompaniments of a bed of coal.

3. State the stratigraphical relations and lithological character of the Triassic system in the Acadian Provinces, and the evidences of Igneous activity connected with it.

4. State the geographical distribution and subdivisions of the Cretaceous and older Kainozoic of western Canada, and the principal localities and horizons of mineral fuel, or

4*a*. Make a general section from the Rocky Mountains to the Laurentian North of Lake Superior. Explain the distribution of the Mesozoic and Pleistocene deposits on the line of section.

5. Give a short account of the Pleistocene geology of the vicinity of Montreal. State the reasons for and against the theories of land and marine glaciation, as applied to the Boulder Clay, and how they may be combined.

6. Name the fossils exhibited, and state in what geological series and in what localities they might be collected.

FACULTY OF APPLIED SCIENCE.

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

GEOMETRY.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,..... .....G. H. CHANDLER, M.A.

1. Describe a parallelogram which shall be equal to a given triangle, and have one of its angles equal to a given angle.

2. In obtuse-angled triangles the square on the side subtending the obtuse angle exceeds the squares on the sides containing that angle by twice the rectangle contained by either of those sides and the line intercepted between the obtuse angle and the foot of the perpendicular let fall on that side from the opposite angle.

3. In a given circle inscribe a regular quindecagon. (*a*) In a given circle inscribe a triangle whose angles are as the numbers 3, 5, 7.

4. Triangles of equal altitude are to one another as their bases.

5. The line bisecting the vertical angle of a triangle divides the base into segments which have the same ratio as the sides.

(*a*) The line bisecting the angle C of a triangle meets the opposite side O is the middle point of that side; show that

$$DO = \frac{1}{2} c \left(\frac{a - b}{a + b} \right)$$

6. Show also that $AC.\ BC = AD.\ DB - CD^2$.

7. Prove the following properties of a parabola:

(*a*) The subnormal is of constant length.

(*b*) The area of the segment cut off by any chord is two-thirds of the area of the circumscribed triangle.

8. From a point outside a parabola draw a pair of tangents to the curve.

9. State and prove any property of an ellipse.

FIRST YEAR.

TRIGONOMETRY (*First Paper*)—ALGEBRA.

SATURDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A

1. Find to 3 decimal places the number of degrees in a radian.

2. Give in the form of a table the sines, cosines, &c., of $0°$, $90°$ $180°$, $270°$.

3. In a similar way give the sines, cosines, &c., of $30°$, $60°$, $120°$, $150°$, $210°$, $300°$.

4. Show that

(*a*) $\sec^2 A = 1 + \tan^2 A$,

(*b*) $\cos(A + B) = \cos A \cos B - \sin A \sin B$.

(*c*) $\cos A = 2\cos^2 \frac{A}{2} - 1$,

(*d*) $\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$.

5. Show that

(*a*) $\tan^2 A - \sin^2 A = \sin^4 A \sec^2 A$,

(*b*) $\frac{\tan A - \tan B}{\tan A + \tan B} = \frac{\sin(A - B)}{\sin(A + B)}$,

(*c*) $\frac{\sin(A + B)}{\sin A - \sin B} = \frac{\sin \frac{1}{2}(A + B)}{\sin \frac{1}{2}(A - B)}$,

(*d*) $\operatorname{cosec} 2A - \cot 2A = \tan A$.

6. Find the G. C. M. of $9x^2 - 25$ and $9x^2 + 3x - 20$; also of $3x^3 - 22x - 15$ and $5x^4 + x^3 - 54x^2 + 18x$.

7. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$, show that $\frac{a}{b} = \frac{+ou + pe}{mb + nd + pf}$.

8. Show that

$\sqrt{8} \cdot \sqrt[3]{6} \cdot \sqrt[4]{54} = 12\sqrt[12]{6}$, and $(5 - 2\sqrt{6}) \div (6 - 2\sqrt{6}) = \frac{1}{6}(3 - \sqrt{6})$.

9. Solve the equations:

(*a*) $a + x - \sqrt{2ax + x^2} = b$,

(*b*) $\frac{5x}{x + 4} - \frac{3x - 2}{2x - 3} = 2$,

(*c*) $\left\{ \begin{array}{l} x^3 + y^3 = 189 \\ x^2 y + x y^2 = 180 \end{array} \right\}$.

10. The fore wheel of a carriage makes 6 revolutions more than the hind wheel in going 120 yards; but if the circumference of each were increased by 1 yard, the fore wheel would make only 4 more revolutions in going the same distance. Find the circumferences.

FIRST YEAR.

TRIGONOMETRY (*Second Paper*).

SATURDAY, APRIL 19TH;—MORNING, 9 TO 12.

Examiner,..... G. H. CHANDLER, M.A.

1. In any triangle

(1) $\sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}}$

(2) $\sin 2A + \sin 2B - \sin 2C = 4 \cos A \cos B \sin C$.

2. In the triangles in which

(1) $a = 122.073$, $A = 64° 31' 45.''3$, $B = 65° 48' 27.''7$.
(2) $a = 786.934$, $b = 604.81$, $c = 431.5957$,
(3) $a = .13874$, $b = .11682$, $C = 34° 33' 37''$,

Show that

(1) $C = 49° 39' 47''$, $b = 123.34$, $c = 103.068$,
(2) $A = 97° 23' 42.''2$, $B = 49° 39' 21.''9$, $C = 32° 56' 55.''9$,
(3) $A = 88° 8' 4.''1$, $B = 57° 18' 18.''9$, $c = .078745$.

3. At an elevation of 100 feet above the water, what is the distance of the visible sea horizon?

4. On the bank of a river stands a column 200 feet high supporting a statue 30 feet high. The statue to an observer on the opposite bank subtends the same angle as a man 6 feet high standing at the base of the column. Show that the breadth of the river = $10\sqrt{115}$ feet.

5. Two railways intersect at an angle of 35° 20', and from the point of intersection two trains start together. If one train travels at the rate of 30 miles per hour, what must be the rate of the other train if the two are 50 miles apart at the end of $2\frac{1}{2}$ hours?

SECOND YEAR.

CALCULUS.

FRIDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner,..... G. H. CHANDLER, M.A.

1. Prove the formulæ for differentiating a^x, $\sin x$, $\tan^{-1} x$.

2. Show that:

(*a*) $d\,(1+x)\sqrt{1-x} = \dfrac{(1-3x)\,dx}{2\sqrt{1-x}}$,

(*b*) $d\,\log\left(\dfrac{e^x}{1+e^x}\right) = \dfrac{dx}{1+e^x}$,

(*c*) $d\log\tan\left(\dfrac{\pi}{4}+\dfrac{x}{2}\right) = \dfrac{dx}{\cos x}$,

(*d*) $d\sin^{-1}\left(\dfrac{x+1}{\sqrt{2}}\right) = \dfrac{dx}{\sqrt{1-2x-x^2}}$

3. Expand $e^x \sec x$ into the series $1 + x + x^2 + \frac{2}{3}x^3 + \ldots\ldots$

4. Explain the geometrical meaning of dy and d^2y, and hence state the conditions for a point of inflexion on a curve.

5. Determine how the parabola of greatest area may be cut from a given right cone.

6. Show that:

(*a*) $\displaystyle\int_0^{\frac{\pi}{4}} \cos^3 x \sin x\,dx = \tfrac{3}{16}$,

(*b*) $\displaystyle\int_a^{\infty} \sqrt{\frac{a-x}{a+x}}\,.\,dx = \frac{\pi}{2} - 1\,.\,a$,

(*c*) $\displaystyle\int_0^1 \frac{dx}{x^2+x+1} = \frac{\pi}{3\sqrt{3}}$.

7. Show that $\displaystyle\int \frac{x^2-3x+3}{x^2-3x+2}\,dx = x + \log\left(\frac{x-2}{x-1}\right)$.

8. Find the whole length of the curve $x^{\frac{2}{3}} + y^{\frac{2}{3}} = a^{\frac{2}{3}}$.

9. Show that the whole area of the curve $y^2 = x^2(1-x^2)$ is $\frac{4}{15}$, and that the volume of the solid formed by revolving this area about the axis of x is $\frac{1}{105}\pi$.

SECOND YEAR.

ANALYTIC GEOMETRY.

SATURDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1. Transform the axes of the curve $5x^2 + 2xy + 5y^2 - 12x - 12y = 0$ to parallel lines through the point $(1, 1)$; then turn the axes through 45°; thus proving the equation to be that of an ellipse with $\sqrt{2}$ and $\sqrt{3}$ as semi-axes.

2. Find the equation of the line which touches the circle $x^2 + y_2 - 3x - 2y = 0$ at the origin.

3. Find the equation of the line drawn from the origin to the intersection of the lines $7x + 3y + 2 = 0$ and $4x - 5y - 7 = 0$.

4. Given the base of a triangle and the length of the medial line drawn from one of its extremities, find the locus of the vertex.

5. Find the length of the chord $x - 7y + 4 = 0$ of the ellipse $x^2 + 7y^2 = 16$.

6. Show that the tangent and normal of a hyperbola make intercepts $a^2 \div x$, and $e^2 x$, respectively, on the axis of x.

7. The normal at any point of a parabola is equally inclined to the axis and the focal distance.

8. The distance of a focus of a hyperbola from an asymptote is half the conjugate axis.

SECOND YEAR.

MECHANICS.

SATURDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1. A body is thrown upward with a velocity of 96 feet per second, after how many seconds will it be moving downward with a velocity of 40 feet per second?

2. A body weighing 386 lbs. and moving at the rate of 8 feet per second is suddenly brought to rest; how much heat is developed?

3. A horse walking at the rate of $2\frac{1}{2}$ miles per hour exerts continuously a force of 125 lbs. How much work does he do in one hour?

4. Find the forces which act in a common isosceles roof.

5. A uniform beam AB rests with one end on a rough horizontal plane AC, and the other against a rough vertical plane BC, the coefficient of friction being the same for both planes: show that in the limiting position of equilibrium (a) the reactions of the planes are at right angles to one another, (b) the angle ABC = twice the angle of repose, (c) and that $(BA - BC) \div AC$ = the coefficient of friction.

6. Find the centre of gravity of a triangle.

7. Explain the distinction between solids and fluids, and between liquids and gases.

8. Calculate the total pressure on a hemispherical cup of two inches radius, filled with water.

9. Define carefully kinetic energy, potential energy, acceleration, density, specific gravity.

10. A body immersed in water is balanced by a weight P, to which it is attached by a string passing over a pulley; when half immersed it is balanced in the same way by $2P$. Show that the sp. gr. $= \frac{3}{2}$.

THIRD YEAR.

MECHANICS.

SATURDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Explain the construction and use of the siphon gauge. How may its sensitiveness be increased?

2. The internal section of a barometer cistern is 4 times that of the tube, and the mercury stands at 30 inches. There is a vacuum 2 inches in length at the top of the tube, into which a mass of air, which would fill one inch of the tube at atmospheric pressure, is introduced. Show that the mercury falls 4 inches.

3. The pressure of 98 cubic inches of air is changed from 26 to 30, and the temperature (Fah.) from 30 to 20; how is the volume changed?

4. What is meant by the elasticity of a gas? Show that the elasticity of a perfect gas is numerically equal to the pressure when the temperature is constant.

5. Describe Grove's and Sprengel's air-pumps.

6. An iron (sp. gr. = 7.2) shell is found to lose half its weight when weighed in water. What fraction of its volume is hollow?

7. If a mass of liquid rotates about a vertical axis, show that its free surface is that of a paraboloid of revolution.

8. Explain the general method of finding centres of pressure, and apply it to find the centre of pressure of a triangle immersed vertically with one side in the surface of the liquid.

9. A rough inclined plane rises 4 feet in 3 horizontal, the coefficient of friction is $\frac{1}{4}$, and a body is projected up the plane with a velocity $3g$. Show that it will return to the starting point in $3 + \sqrt{15}$ seconds.

THIRD YEAR.

SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,..... G. H. CHANDLER, M.A.

1. In any spherical triangle

(*a*) $\cos a = \cos b \cos c + \sin b \sin c \cos A$,

(*b*) $\cos \frac{a}{2} = \sqrt{\frac{\cos (S-B) \cos (S-C)}{\sin B \sin C}}$.

2. State and prove the "sine rule."

3. Explain the methods of solving the various cases in the solution of triangles.

4. Define any 6 terms used in Astronomy.

5. The altitude of α Tauri (Naut. Alm., p. 329) is observed to be 20° 31′ (after culmination) at Montreal to-day; find the mean time of observation.

6. The altitude of the pole star being 42° 25′ 20″ at $12h.\ 25m.$ sidereal time, April 6th, 1890; find the latitude of the place of observation.

7. The culmination of the bright limb of the moon is observed at $8h.\ 53m.\ 27s.$ sidereal time, March 30th, 1890; find the longitude of the place of observation.

THIRD YEAR.

MATHEMATICS (*Advanced*).

SATURDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner,..... .....G. H. CHANDLER, M.A.

1. Find the angle between two lines in space, their direction angles being given.

2. The perpendicular from the centre of an ellipse on the tangent at any point = $ab \div b$, where b is the semi-diameter conjugate to that passing through the point of contact.

3. The perpendicular from the pole on the tangent at any point of the curve $r^2 = a^2 \cos 2\Theta$ is $r^3 \div a^2$.

4. The radius of curvature at any point of the same curve is $a^2 \div 3r$.

5. Show that $\frac{x - x^x}{1 - x + \log x} = 2$, when $x = 1$.

6. Show that:

(*a*) $\int \tan^4 x \, dx = \frac{1}{3} \tan^3 x - \tan x + x$,

(*b*) $\int \sqrt{a^2 + x^2} \, dx = \frac{x}{2} \sqrt{a^2 + x^2} + \frac{a^2}{2} \log \left(x + \sqrt{a^2 + x^2} \right)$,

(*c*) $\int \frac{x^3 \, dx}{(1 + x^2)^{\frac{3}{2}}} = \frac{x^2 + 2}{\sqrt{1 + x^2}}$,

(*d*) $\int_a^{2a} \frac{dx}{\sqrt{x^2 - ax}} = \log \left(3 + 2\sqrt{2} \right)$

7. The altitude of the greatest cylinder which can be cut from a given paraboloid of revolution is half the altitude of the paraboloid.

8. A prolate spheroid is bisected by a plane perpendicular to the axis and through its middle point; show that the centre of gravity of each part divides the axis into parts which have the ratio 3 : 8.

9. Investigate the formula for finding the velocity of a falling body, it being assumed that gravity varies inversely as the square of the distance from the centre of the earth.

FIRST YEAR.

SANITATION.

MONDAY, MARCH 24TH, 1890:—7 P.M.

Examiners, ... { HENRY T. BOVEY M.A., M.INST.C.E. R. P. FLEMING, M. CAN. SOC. C.E.

1. How would you judge of the healthfulness of the air in a room? Why is the amount of carbonic acid gas in a sample of air chosen as the measure of the impurities it contains?

2. Describe briefly the method of carrying out any of the "Pail Systems." What are the chief objections to a Pail System?

3. What is the action of dry earth, in an earth closet, in deodorizing dejections? What remarkable property is common to dry earth and charcoal in connection with the deodorizing of decaying matters?

4. Which is the cleanliest and generally the most practicable method of disposing of the waste waters and fœcal matters of a town? What are the chief advantages of such a system?

5. State the principal points to be observed in laying down a system of sewers. Why should a sewer be water-tight?

6. Sketch a simple device for admitting part of the rainfall into the main sewers and excluding the storm water.

7. Describe the proper method of making junctions between branch drains and the main sewer, having regard to the angle of entrance and position in the sewer. Give reasons for your answer.

8. Why are house drains unsuitable as ventilators for the public sewers? What are the objections to rain-water pipes as ventilators of sewers and drains?

9. How does the flushing of sewers aid in their ventilation?

10. Give reasons showing the necessity of the thorough ventilation of all public sewers.

11. Why is it impossible in practice to entirely prevent the formation of sewage gas from flowing sewage?

12. How are the gases from house-drains prevented from entering the house through the pipes used to convey away the sewage?

13. Why is the ordinary syphon trap on the waste pipes of plumbing fixtures not sufficient security in itself against the entrance of sewer gas into a house?

14. Sketch a tilting tank for flushing sewers and drains, and explain its principle and operation.

THIRD YEAR AND B.A.Sc. EXAMINATIONS.

COURSE OF MECHANICAL ENGINEERING.

MACHINERY AND MILLWORK.

THURSDAY, MARCH 27TH :—9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., M INST.C.E.

1. Shew that the velocity of the piston of a horizontal engine, at any point of its stroke, may be represented by the radius vector of a certain polar curve.

How is the form of this curve affected by the obliquity of the connecting rod ?

Stroke = 30-ins., connecting-rod = 75 ins.; find, *graphically*, the velocity of the piston when the crank has travelled from a dead point through the angles 60°, 120°, 240°, 300°.

2. What is meant by *Pair, Lower Pair, Higher Pair?* Give examples.

3. The extreme velocity ratio of two speed cones, from the same pattern with 5 steps, is 16 to 1; the axes of the cones are 8 ft. apart, and the least admissible diar. is 6-ins.; find the diars. of the remaining steps.

4. A pair of shafts with their axes meeting at 60°, are to be a pair of bevel wheels, and are to have a velocity-ratio 3; find the pitch surfaces.

5. Two pulleys are connected by a leather belt running at v ft. per sec. Determine the relation between the tensions on the driving and driven side of the belt. Find the magnitudes of the tensions, the pulleys being 4 ft. in diar., and making 600 revols. per min., the belt transmitting 20 H P. ($\mu = \frac{1}{4}$).

6 What is meant by *mechanical advantage?*

The nut at the end of a bolt is screwed up by means of a force at the end of spanner 3ft. long; coeff. of fr. = $\frac{1}{6}$; mean diar. of thread = $\frac{1}{2}$-in.; pitch = .08-in.; find the mechanical advantage, 1st neglecting fr. of nut, 2nd, taking fr. of nut into account, the effective diar of the nut being $\frac{3}{4}$-in.

7. The two equal cranks of a drag link turn upon centres 2 ins. apart. The angle by which one of the cranks successively fails behind and overtakes the other is 120°. Determine the lengths of the cranks and connecting rod.

8. A pulley A upon a main shaft drives a pulley B by means of a crossed belt. A spur wheel C on the shaft with B drives a pinion D; a pulley E on the shaft with D drives a pulley F by an open belt.

Given diar. of A, 30-ins.; of B, 15-ins.; of E, 30-ins.; of F, 10-ins.; revols. of A, 60 per minute; no. of teeth in C, 60, and in D, 15; find the number of revols. of F per minute, and the direction in which it turns relatively to A.

9. In toothed gearing, the smaller the arc of approach, the greater the mechanical advantage, and the less the work absorbed by friction. Prove this, and also show that no work will be transmitted if

$$r_1 \sin(\Theta - \varphi) + x \sin\phi = 0,$$

r being the radius of the driver, x the length of the line from the pitch point to the point of contact of the teeth, Θ the angle between this line and the line of centres, and ϕ the angle of friction.

EXAMINATION FOR THE DEGREE OF B.A. Sc.

COURSE OF MECHANICAL ENGINEERING.

MACHINERY AND MILLWORK.

THURSDAY, MARCH 27TH:—AFTERNOON.

Examiner,..... HENRY T. BOVEY, M.A., M INST.C.E.

1. In a direct acting engine shew that

$$\frac{\text{crank-effort}}{\text{effort on piston}} = \frac{\text{velocity of piston}}{\text{velocity of crank pin}}$$

An engine with a connecting rod = 6 cranks = 6-ft., receives steam at 70 lbs. pr. per sq.-in., and cuts off at *one-quarter* stroke; find the crank-effort when the piston has travelled *one-third* of its forward stroke; diar of piston = 2-ft. Also find the position of the piston where its velocity is a maximum.

2. What is the object of "balancing" an engine?
Shew how to balance a double cylinder engine with the cranks at 90°.

3. A 4-ins. × 3-ins. diar. crank-pin is to be balanced by two weights on the same side of the crank; the length of the crank is 12-ins., the engine makes 100 revols. per minute, the distance of the C. G. of each weight from the axis of the shaft is 6-ins. Find the weights.

4. State and prove the conditions that must be satisfied in order that a belt may remain in place on a pulley.
Why is it practically impossible to keep a belt in a particular place if the shafts are parallel and the pulleys cylindrical?

5. Data: stroke = 3-ft.; no. of revols. per min. = 60; cut off at one-half stroke; initial pr. = 56-lb. per sq. in. abs.; diar. of piston = 10-ins.; weight of reciprocating parts = 550-lbs.; back-pressure = 1½ lbs. per sq.-in. abs.; find the effective pressure at each fourth of the stroke, taking account of the inertia of the piston. Also find the pr. equivalent to *inertia* at commencement of stroke.

6. Describe any dynamometer for measuring the work of a machine, and point out any errors to which it is liable.

7. Find the outline of a cam to turn uniformly in one direction and to give the following motion to a point on a line through the axis of the cam; the point to remain stationary during the first $\frac{1}{12}$ revol. of the cane, to move forward uniformly 1.25 -ins. during the next $\frac{8}{12}$ revol. and to return with a uniformly accelerated motion to its initial position in the remaining 12 revol. Take 2-ins. as shortest distance between the point and axis of the cam, and make the diagram 6-ins. long.

8. Explain the meaning of the terms "co-efficient of energy," "fluctuation of energy."

A pair of 250 h. p. engines, with cranks at 90°, and working against a uniform resistance and under a uniform steam pr., are running at 60-revols. per min. Assuming an indefinitely long connecting rod, find the max. and min. moments of crank effort, the fluctuation of energy and the coefficient of energy.

9. What are the characteristic features of involute teeth? A pair of wheels have 15 and 72 teeth (involute), respectively, the larger being the driver. If the obliquity = $14\frac{1}{4}°$, and if arc of approach = $1\frac{1}{5}$ arc of recess = pitch, find the addendum.

EXAMINATION FOR THE DEGREE OF B.A.Sc.

COURSE OF MECHANICAL ENGINEERING.

ENGINE PROPORTIONS.

MONDAY, APRIL 14TH :—MORNING, 9 to 12.

Examiner,.....HENRY T. BOVEY, M.A., M.INST.C.E.

1. What considerations govern the thickness of (*a*) the steam cylinder, (*b*) the steam chest?

Ex. pr. = 100-lbs. per sq.-in.; diar. of cylr. = 24-ins.; max. inside length of chest = 36-ins; width of chest = 18-ins.

2. Explain how you would design a key for the connection between the piston rod and cross-head and also for a shaft.

Ex. diar. of cylr. = 18-ins.; stroke = 24-ins.; no. of revols. per min. = 60; initial pr. = 70-lbs. per sq.-in. abs.; steel key with a shearing strength of 60,000-lbs. per sq.-in.

3. Shew how to determine the area of the slides.

Find the area of the slides for the engine in the preceding question, the connecting rod being equal to *six* cranks, and the safe pr. per sq. in. upon a slide being 125-lbs. Assume cut off at middle of stroke.

4. Design a connecting rod for the engine in question 3, assuming it to be of steel.

5. Discuss the points to be observed in the design of the crank-pin and boxes.

6. If P_1, P_2 are respectively the total initial and final pressures upon the piston of an engine, if G is the stroke, and V the *uniform* velocity of the crank-pin, shew that the weight of the reciprocating parts $= 8\,S.\,\frac{P_1 - P_2}{V^2}$

7. Why is cast-iron unsuitable for cranks? What special property renders wrought-iron and steel suitable for cranks? Why must special care be taken to have a sufficient thickness of metal around the eye?

Design a steel single crank for engine in question 2, the thickness of the crank being 6-ins.

8. A steel shaft carries a 5-ft. pulley midway between the supports, and makes 6 -revols. per min.; the tangential force on the pulley being 500 lbs.; taking the coeff. of working strength at 11,200-lbs. per sq.-in., find the diar. of the shaft and the proper distance between the bearings.

EXAMINATION FOR THE DEGREE OF B.A. Sc.

COURSE OF MECHANICAL ENGINEERING.

MACHINERY AND MILLWORK (*Advanced*).

FRIDAY, APRIL 11TH;—MORNING, 9 to 12.

Examiner,..... HENRY T. BOVEY, M.A., M.I.M.E.

1. In the case of a lift-hammer, show that, during the *phase of shock*, the initial (v_0) and final (v_1) velocities of the point of contact of the cam and hammer are connected by the relation,

$$\frac{v_0 - v_1}{v_1} = \frac{r_2 (r_2 + f_1 \rho_2)}{r_1 (r_1 - f_1 \rho_1)} \cdot \frac{I_1 + \rho_1 f_1}{I_2} \cdot \frac{P.M\rho}{}.$$

where M = mass of hammer; ρ_1, ρ_2 = radii of hammer and cam wheel shafts, respectively; r_1, r_2 = horizontal distances of pt. of contact from axes of hammer and wheel, respectively; a = distance of C.G. of hammer from axis of rotation, $f_1 \sin \phi$, ϕ being the angle of friction.

Also show that the energy expended in shock is approximately

$$\tfrac{1}{2} I \omega^2,$$

ω being the mean angular velocity.

2. An engine with a 24 ins. cylinder and a connecting rod = 6 cranks = 6-ft., makes 60 revols. per min., shew that the pressure required to start and stop the engine at the dead points = $\frac{11}{24}$ (weight of reciprocating parts).

3. Construct a curve of crank-effort for the accompanying indicator diagram, taking into account the effect of inertia.

4 In a four link chain consisting of four turning pairs with parallel axes, A and B are two equal "anti-parallel" cranks, and C and D are the remaining equal links. Shew that the centroids for the motion of A and B are equal ellipses, and those for the motion of C and D equal hyperbolæ.

5. Discuss the influence of initial condensation in the cylinder of a steam-engine.

SECOND, THIRD AND FOURTH YEARS.

COURSE OF MECHANICAL ENGINEERING.

PRACTICAL CONSTRUCTION (MARINE ENGINES).

Examiners,..... { HENRY T. BOVEY, M.A., M.INST.C.E.
T. MIDDLETON, M. CAN. SOC. C.E.

N.B.—*Data Am. River Boat Beam Engine, cylinder* 50″ *diar.; stroke* 10-*ft.; pr. per sq. in.*, 60-*lbs.*

1. With above data, find *thickness* of cylinder and size of ports.

2. Sketch a piston suitable for a river boat beam engine, and point out its characteristic advantages.

3. Determine the diar. of the piston-rod. What device is adopted to allow of the piston-rod working out of line, without producing injurious effects on the rod and stuffing-box?

4. Shew by sketch of a cross-section the difference between box-guides and bar-guides.

5. Sketch a strap for a skeleton beam suitable for river boat engine, giving length, depth and sectional area of the smallest part.

6. What should be the diar. at the journals of the crank shafts, the constant for wrought iron being taken at 125?

7. Describe the construction and object of oval paddle-wheels.

8. Sketch the arrangement of condenser and air-pump as commonly used in river boat engine, and briefly describe their action.

9. What is the foot-valve, and what is its use? What is the floating valve and its use?

10. Sketch a valve chest or nozzle, and shew two methods adopted to overcome the difficulties arising from the unequal expansion of side pipe and cylinder.

11. In the above engine, what is the amount of vertical lift on framing? Give size and number of bolts required to resist the same.

THIRD AND FOURTH YEAR EXAMINATION.

COURSES OF CIVIL, MECHANICAL AND MINING ENGINEERING.

THEORY OF STRUCTURES (*Paper I*).

MONDAY, MARCH 31ST :—MORNING, 9 TO 12.

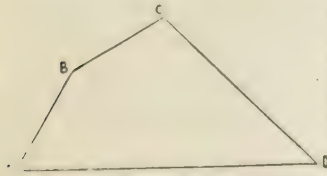
Examiner,..... HENRY T. BOVEY, M.A., M.INST.C.E.

1. Shew that the intersection of the first and last sides of the funicular polygon of a system of forces in one plane is a point on the actual resultant of the forces.

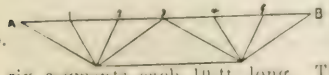
2. Four wheels, each carrying 5-tons, travel over a girder of 24-ft. clear span, at equal distances 4-ft. apart. Determine, graphically, the max. B.M. at 8-ft. from a support, and also the abs. max. B.M. on the girder.

3. The post of a 10-ton jib-crane is 10-ft.; the jib is inclined at 30°, and the tie at 60° to the vertical. Find the stresses in the jib and tie, and also the B.M. at the foot of the post.

How will these stresses be modified if the chain has *four* falls, and if it passes to the chain-barrel in a direction bisecting the angle between the jib and tie?

4. 

In the frame represented by the Fig., the bars AB, BC are of equal length, and are inclined to the horizontal at angles of 60° and 30°, respectively; the bar CD is inclined at 45° to the horizontal. What weight must be concentrated at C to maintain the equilibrium of the frame under a weight W at B? Draw stress diagram. If a weight W is to be borne at C as well as at B, how would you prevent the distortion of the frame? Draw stress diagram.

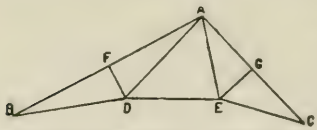
5. 

The boom AB of the accompanying truss is supported at five intermediate points dividing the length into six segments each 10 ft long. The depth of the truss = 10 ft. Draw stress diagrams for the following cases :—

(*a*) A weight of 100-lbs. at each intermediate point of support.
(*b*) A single weight of 500-lbs. at 2.
(*c*) Weights of 100, 200, 300, 400, 500-lbs. at 1, 2, 3, 4, 5, respectively.

6.

The horizontal boom CD is divided into 8 segments, each 8-ft. long, by seven intermediate supports; depth of truss at ends = 16-ft.; a weight of 1-ton is concentrated at C and at D, and a weight of 2-tons at each of the intermediate supports. Draw the stress diagram.

7. 

The span of the roof truss represented by the Fig. is 60-ft.; the rafters AB, AC are inclined to the vertical at angles of 60° and 45°, respectively; the strut DF = 7½-ft.; the tie DE is horizontal; the dead load upon each rafter = 100-lbs. per lineal ft.; the wind pressure normal to AB = 300-lbs. per lineal ft.; rollers at C., find the stresses in all the members.

How will the stress diagram be modified,

(*a*) If in addition to the above loads there is a single weight of 500-lbs. at D.
(*b*) If the strut DF is omitted.
(*c*) If the rollers are at B?

8. A girder ABCD is supported at the ends A, D, and at two intermediate points B, C; AB=BC=CD=50-ft.; the side spans are hinged at points E and F, where AE=40-ft. and DF=30-ft.; the load upon each side span is ½-ton per lineal ft. Draw curves of shearing force and bending moment when BC is loaded (*a*) with ½-ton per lineal ft., (*b*) with 1½ ton per lineal ft.

COURSES OF CIVIL, MECHANICAL AND MINING ENGINEERING.

THEORY OF STRUCTURES (*Paper II.*)

WEDNESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner,..... ..... HENRY T. BOVEY, M.A., M.INST.C.E.

1. Work equivalent to 50 ft. lbs. is done upon a bar of constant sectional area, and produces in it a uniform tensile stress of 10,000 lbs. per sq. in. Find the cubic content of the bar, E being 30,000,000.

2. Shew that the total kinetic energy of a system of heavy particles rigidly connected together and revolving with a uniform angular velocity A about a given axis is, $\frac{1}{2} I. A^2$

I being the moment of inertia of the system with respect to the axis of rotation.

A flywheel weighs 20 tons and its radius of gyration is 5 ft. How much work is given out while the speed falls from 60 to 50 revols. per minute ?

3. Prove the relation between the B.M. and S.F. at any transverse section of a beam.

Employ the relation to determine the max. B.M. on a horizontal beam supported at the two ends and carrying load of which the intensity varies uniformly from c at one end to c + w l at the other.

4. Write down the relations connecting the bending moment and moment of resistance at any transverse section of a beam, and state the assumptions upon which they depend.

A beam supported at its two ends can just bear its own weight W together with a single weight $\frac{1}{2}$W at the centre. What load may be placed at the centre of a beam n times as long, of the same material and *similar* section, but m^2 times as great ?

5. A cast-iron beam has a cruciform section with equal ribs, 2 ins. thick and 4 ins. long. If the intensity of longitudinal shear at the neutral axis is 1 ton per sq. in., find the total shear which the section can resist, and also find the moment of resistance, the least coeff. of working tensile or compressive strength being 1 ton per sq. in.

6. Deduce the following relation connecting the flange and web areas of a double tee-section

$$a_1 f_1 + A_1 \frac{f_1 - f_2}{2} = a_2 f_2$$

What are the actual max. stresses in the section ?

A double-flanged cast-iron girder, 14 ins. deep, is to cross a space of 20 ft., and to carry a uniformly distributed load of 20 tons. If the coefficient of compressive strength is 5 tons and that of the tensile strength 2 tons per sq. in., find suitable dimensions for the section.

Also determine the stiffness of the beam E being 8000 tons.

7. Shew that the flange stress at the centre of a girder of span l, supported at the two ends and loaded uniformly is $\frac{8 \text{ D. E. Y}}{l^2}$ for a given deflection D, Y being the distance from the neutral axis to the outside skin of the flange.

8. A steel strut 10 ft. long and with two pin ends, consists of two tees each 4 ins. × 4 ins. × $\frac{1}{2}$ in. Taking f = 60,000, $\frac{1}{a_1}$ = 40,000 and 6 as a factor of safety, find the working load.

Also find the deviation of the line of action of the load from the axis of the strut, so that the max. stress in the metal may not succeed 10,000 lbs. per sq. in.

9. If H. P. is the horse-power transmitted by a wrought-iron shaft, making N revols. per minute, shew that its diar. D is given by the equation

$$D=4\left(\frac{H.P.}{N}\right)^{\frac{1}{3}}$$

coeff. of strength = 7,200 lbs. per sq. in. and max. twisting couple = 1.43 × mean twisting couple.

10. What twisting couple can be transmitted by a hollow steel shaft of 8 ins. internal and 10 ins. internal diar., the working stress being 5 tons per sq. in. ?

11. The upper half of the section of a masonry wall is a rectangle 4 ft. wide, and the lower half a rectangle 6 ft. wide, one face being plumb. If the masonry weighs 125 lbs. per cubic ft., find the height of the wall, so that the stress on the base may nowhere exceed 10,000 lbs per sq. ft., when the wall retains water, (*a*) on the plumb face, (*b*) on the stepped face.

EXAMINATION FOR THE DEGREE OF B.A.Sc.

COURSE OF CIVIL ENGINEERING.

THEORY OF STRUCTURES (*Paper III*).

WEDNESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiner,..... .....HENRY T. BOVEY, M.A., M.INST.C.E.

1. An eight-panel Howe truss of 80-ft. span and 10-ft. deep, carries a uniformly distributed dead load of 5-tons per panel. Determine the stresses in all the members of the fourth panel met by a vertical plane.

What must be the panel live load to double the stress in the diagonal of this panel? What stress will the counter brace in the same panel have to bear under such a live load ?

2. A six-panel single intersection Pratt truss is uniformly loaded. *Assuming* the same co-efficient of strength both for compression and tension, shew that the economy of material will be a max. with the diagonals inclined at 32° 35′ to the vertical.

3. Design a plate-iron cross-tie from the following data :—

Distance between bearings = 13-ft.; load concentrated at each rail crossing = 650-lbs.; uniformly distributed load = 40,000-lbs.; depth = 20-ins.; thickness of web = $\frac{1}{2}$ in.; coefficient of working strength = 8000-lbs. per sq.-in.

4. Deduce, *analytically*, a general expression for the max. stresses in the diagonals of a bowstring truss with isosceles bracing when subjected to a live load of uniform intensity.

5. A truss with horizontal chords is arbitrarily loaded with a number of weights, prove:

1*st*. That the shear at any point is greater or less than the shear at the same point when all the weights have moved onwards in the same direction through any given distance, according as the weight transferred from one side of the point to the other, divided by the distance of transfer, is greater or less than the total weight divided by the span.

2*nd*. That the B.M. at the point with the first distribution will be greater or less than the B.M. with the second distribution according as the sum of the weights between the support and the point divided by the corresponding segment is greater or less than the total weight divided by the span.

6. Loads of $3\frac{3}{4}$, 6, 6, 6 and 6-tons follow each other in *order* over a 10-panel truss, at distances of 8, $5\frac{3}{4}$, $4\frac{1}{2}$ and $4\frac{1}{2}$-ft., apart. Apply the results of the preceding questions, to determine the portion of the loads which will give the max. diagonal and flange stresses in the 3rd and 4th panels.

7. Compare the relative advantages and disadvantages of rivetted and pin-connected trusses.

Determine the stresses in the members of a lattice truss with two systems of triangles of 40-ft. span and 8-ft. depth.

(a) When rivetted together.

(b) When pin connected.

Dead load = $\frac{1}{4}$-ton per lineal ft., live load = $\frac{1}{2}$-ton per lineal ft.

The joints between the diagonals and booms divide the length into five equal segments.

EXAMINATIONS FOR THE DEGREE OF B.A.Sc.

COURSE OF CIVIL ENGINEERING.

THEORY OF STRUCTURES (*Paper* IV.).

FRIDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner, ... HENRY T. BOVEY, M.A., M.INST.C.E.

1. A bridge platform is suspended from chains composed of a number of links. If the weight of each link is given, shew how to trace the exact form assumed by the chain.

2. Shew that a chain of uniform section and loaded uniformly per horizontal unit of length will take the form of a parabola. Also shew that the horizontal pull upon the cable is $\frac{M}{h}$, h being the dip and M the B. M. at the lowest point, the platform being assumed an independent girder supported at the ends.

3. Deduce an expression giving the approximate length (S) of an arc of the cable in Question 2, measured from its lowest point. Also find the increment in the dip corresponding to an increase Δ S in the length.

A suspension bridge has a dip of 10-ft. and a span of 300-ft. Find the increase of dip due to a change of 100° F. from the mean temperature, the coeff. of expansion being .00125 per 180° F.

Also find the corresponding flange stress in the stiffening truss, which is $12\frac{1}{2}$-ft. deep, the coeff. of elasticity being 8,000-tons.

4. The ends of a cable are attached to saddles free to move horizontally. If Δ a is the horizontal movement of each saddle due to the expansion of the cables in the side-spans, and if Δ S is the extension of the chain between the two saddles, shew that the increment of the dip (h) is approximately

$$\frac{3a}{16h}\Delta S + \Delta a \left(\frac{3a}{8h} - \frac{h}{a}\right)$$

5. What is the object of a stiffening truss? What advantage is gained by hinging it at the centre?

Write down the equations of equilibrum for a stiffening truss A O B hinged at the centre O, (*a*) when the load covers a length A C $> \frac{l}{2}$, (*b*) when the load covers a length B C $< \frac{l}{2}$. Shew that the abs. max. B.M. is very nearly $\frac{8}{4.5} w l^2$.

6. What is the "hydrostatic arch?" Deduce its equation.

7. Deduce the conditions of equilibrium for an arched rib of uniform section and hinged at both ends.

If the axis is a parabola of span 2 l and rise k, and if the arch is flat shew that the horizontal thrust for a change of t° from the mean temperature is

$$\pm \frac{15}{8} \text{ et. } \frac{E.\ I.}{k^2}$$

An arched rib with parabolic axis of 100-ft. span, 12½-ft. rise, is loaded with 1-ton at the centre and 1-ton at 20-ft. from the centre, measured horizontally.

Determine the thrusts and shears along the rib at the latter point, and shew how they will be affected by a change of 100 ° F, from the mean temperature, e for 180 ° F being .00125.

THIRD AND FOURTH YEARS.

COURSES OF CIVIL AND MECHANICAL ENGINEERING.

THEORY OF STRUCTURES (*Advanced*).

Paper I.

TUESDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiner,.....HENRY T. BOVEY, M.A., M.INST.C.E.

1. Determine an expression for the work done in bending a beam.

A horizontal beam with both ends absolutely fixed is loaded with a weight W at a point dividing the span into two segments a and b. Shew that the deflection at the point is $\frac{W}{3\,E.\,I}\cdot\left(\frac{ab}{a+b}\right)^3$, E being the coeff. of elasticity and I the moment of inertia, and find the max. deflection. Also find the work done in bending the beam.

2. Determine the isosceles section of maximum strength which can be cut out of a circular section of given diar., and compare its strength with that of the latter.

3. Find the upper and lower sectional areas of a wrought iron suspender of uniform strength and 300-ft. long which will safely carry its own weight and 20 tons.

Also find the extension of the rod.

4. A timber beam of 25-ft. clear span, 18-ins. depth and 6-ins. width has both ends fixed, and carries a uniformly distributed load of 2-tons.

Find the max. intensities of thrust, shear and tension at the quarter-span, half way between the neutral axis and the outside skin. Also find the position of the planes of principal stress at the same point.

5. If an end of a continuous girder is fixed, and if M_1 is the moment of fixture and M_2 the bending moment at the consecutive support, shew that

$$2M_1 + M_2 = -\frac{wl^2}{4.}$$

$$\text{or} \quad 2M_1 + M_2 = -\frac{1}{l^2}\Sigma\,(P.\ p.\ l\text{–}p.\ 2\ l\text{–}p),$$

according to the loading.

6. A continuous girder of two equal 50-ft. spans is fixed at one of the end supports. The girder carries a uniformly distributed load of 1,000-lbs. per lineal ft. Find the reactions and moment of fixture.

How much must the intermediate support be lowered so that it may bear none of the load? How much should the support at the free end be lowered to bring upon the supports the same loads as before

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COURSE OF CIVIL ENGINEERING.

THEORY OF STRUCTURES (*Advanced*).

Paper II.

SATURDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner,..... HENRY T. BOVEY, M.A., M.INST.C.E.

1. The Oise iron viaduct consists of seven spans, viz., two end spans of 28.8 m., and five intermediate spans of 38 m. Each main girder is continuous and carries a dead load of 1,450 k. per lineal metre; find the B. M. at the 4th support from the left, when an additional load of 2250k per lineal metre covers the 2nd, 4th, 5th and 7th spans. Would the following section be sufficiently strong at the 4th support:—two equal flanges each composed of a 600-mm × 8-mm. plate riveted by means of two 100-mm. × 100-mm. × 12-mm. angles to a 600-mm. × 10-mm. web plate. Total depth of section = 4.016 m., the distance between the web plates being 2.8m. If insufficient, how would you strengthen it?

2. The axis of an arched rib of span l and rise k, and hinged at both ends, is a parabola. If a weight W is placed upon the rib or the horizontal distance a from the centre of the span, and if z is the vertical distance from the springing line of the highest point of the lineal arch, shew that

$$z\left\{1 + \frac{l^2 + a^2}{l^2}\left(\frac{2k^2}{l^2} - 1\right) - \frac{2}{15}\cdot\frac{k^2}{l^6}\left(l^4 + l^2a^2 + a^4\right)\right\} = k\left(\frac{16}{15} + \frac{32}{105}\cdot\frac{k^2}{l^2}\right)$$

Ex. l = 50 ft. k = 15-ft.; weight of 1-ton at centre; determine the thrust along the rib at 10-ft. from the centre, measured horizontally. Also

find the horizontal thrust corresponding to a decrease of 60° F from the average temperature, the coeff. of expansion per degree being .0000067.

3. Prove the formula,

$$M = E.\,I.\left(\frac{1}{R_0} - \frac{1}{R}\right),$$

and clearly state all the assumptions involved.

4. Shew that the displacements of a point (x, y) in the axis of an arched rib, when the latter is loaded, are approximately connected by the relations,

$$\frac{dX}{dy} = i = -\frac{dY}{dx}$$

How are the values of X and Y affected by the thrust along the rib and a change of temperature?

5. Point out the errors in Euler's Theory of the flexure of columns.

Assuming the general equation of flexure given in question 3, shew that the deflection of a column is given by the equation,

$$y + a = a.\frac{\cos k\,x}{\cos \frac{k.l}{2}} + \frac{\delta_0}{1 - k^2 l^2 / \pi^2}\cos \frac{\pi x}{l},$$

where a = deviation of line of load from axis (vertical) of col., $k^2 = \frac{p}{E.\,\rho^2}$

ρ = radius of gyration, $p = \frac{\text{load}}{\text{area}}$, δ_0 = a coefficient.

Ex—In one of Christie's experiments $\frac{l}{\rho} = 154$, and the deflection for an increase of 3,000-lbs. in the load = .01-in.; the strut was a 2 ins. × 3-ins. × $\frac{5}{16}$-in. angle iron; shew that $\frac{a}{8} + \frac{\delta^2}{\pi^2} = .0047$

E being 29,000,000 lbs.

EXAMINATION FOR THE DEGREE OF B.A.Sc.

COURSES OF CIVIL, MECHANICAL AND MINING ENGINEERING.

HEAT (*Paper I.*).

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....HENRY T. BOVEY, M.INST.C.E., F.R.S.C.

1. Distinguish between sensible and latent heat. What is meant by the latent heat of steam? State the value of the latent heat of steam at 212° F.

How much water at 170° F could be just raised to the boiling point by means of the latent heat of 1-lb. of steam at atm. pr.?

2. A gas is expanded adiabatically r-times, find its final temperature, the initial temperature being T_1, and also find the total loss of heat by the gas during the expansion. *Ex.* $T_1 = 600°$ F, $r = 10$.

3. Shew that the efficiency of a reversible engine is

$$\frac{T_1 - T_2}{T_1},$$

T_1, T_2 being the absolute temperatures between which the engine works.

Compare the efficiencies of two reversible engines, the one working with steam at 4 atmos., the other with steam at 8 atmos., and both expanding to the pressure of the condenser, viz., $\frac{1}{10}$ atmos.

4. A volume V_1 of steam at the abs. pr. P_1 expands in a cylinder to the volume V_2 against a back pressure P_3, find the work done during the expansion, the law of expansion being $P.V^n = \text{const.}$

What value would you give to n, (*a*) When the steam expands like air (*b*) if the cylinder is non-conducting, (*c*) if the cylinder has a steam jacket, the steam being *dry saturated?*

5. An engine with a 12-in. cylr. and an 18-in. stroke cuts off at $\frac{1}{2}$. If the clearance is 15% of the volume swept through by the piston, find the actual rate of expansion. The initial pr. is 80-lbs. per sq.in. abs., and the steam is dry at the end of the stroke; the back pr. is $1\frac{1}{2}$-lbs per sq.in.; the number of revols. per min. is 100; find the I.H.P. and the quantity of water per I.H.P. per hour.

How much heat must be added to the steam during expansion in order that it may be dry *and saturated* at the end of the stroke?

(Vol. of 1 lb. of steam at 80-lbs. = 5.3926 c. ft.)

6. Enumerate the facts recorded by an indicator diagram and the principal causes affecting its form.

Shew how the accompanying ideal diagram is modified, (*a*) by throttling the steam at admission, (*b*) by the *gradual* cutting off of the steam, (*c*) by a leaky piston, (*d*) by the presence of water in the cylinder, (*e*) by a leaky slide-valve, (*f*) by giving the eccentric too little advance.

7. Explain the cause and effect of condensation and re-evaporation in a steam-cylinder. What methods are employed to diminish the consequent loss of efficiency?

8. Find the pressure in the receiver of a two cylinder compound engine in terms of the initial pr. P, the total rate of expansion, the rate of

expansion in the L.P. cylinder, and the ratio of volume of receiver to vol of H. P. cylr.

Ex. p_1 = 88-lbs. per sq.-in., *total* rate of expansion = 5·32, rate of expansion in L. P. cylr. = 1.6; stroke = 3½ ft.; diar. of H. P. cylr. = 40-ins., of L. P. cylr. = 50-ins.

If the cranks are at 90°, find the I.H.P., the no. of revols. per minute being 65, and the back pr. 5-lbs. per sq. in.

EXAMINATION FOR THE DEGREE OF B.A Sc.

COURSES OF CIVIL AND MECHANICAL ENGINEERING.

HEAT (*Advanced*).

FRIDAY, MARCH 28TH :—MORNING, 9 TO 12.

Examiner, ... HENRY T. BOVEY, M.INST.C.E., F.R.S.C.

1. Each of two vessels A and B contains 1-lb. of a mixture of water and steam. The steam in A weighs ⅔ lb., that in B ⅓ lb., the temperature being 312° F in A and 228° F in B. If the two vessels are made to communicate with each other, and if it is assumed that there is no change in the quantity of heat, find the weight of steam in the resulting mixture, the temperature of the mixture, and the ratio of the volumes of A and B.

2. Shew that the latent heat of isothermal expansion is measured by the increase of pressure per unit increase of temperature, the volume being constant, multiplied by the absolute temperature.

Hence shew that elementary change in temperature corresponding to an elementary change in pr. is given by, J. L. $\Delta t = T (v_0 - v_1) \Delta p_1$ v_0, v_1 being the sp. vols. of a unit mass of two substances contained in a vessel, the one differing thermally from the other by the latent heat L.

Apply the result to find the rise of temperature of boiling point corresponding to an increase in the pressure of 1 atm.

3. If the expansion of superheated steam is isothermal, shew that the interior work of expansion is

$$\frac{3\,b}{J}\left(p_1^{\frac{1}{4}} - p_2^{\frac{1}{4}}\right),$$

p_1, p_2 being the initial and final pressures.

When 1 lb. of superheated steam expands from 10 atms. to 1 atm. at constant temperature, how much of the work is external and how much internal?

4. 1 lb. of water is raised from abs. temp. T_2 to abs. temp. T_1, and then evaporated; determine its energy in terms of T_1, T_2 and r_1, the latent heat of evaporation at T_1

5. An engine works against a constant resistance, and if ω_1, ω_2 are the angular velocities of the driving shaft at the beginning and end of a semi-revolution, shew that

$$\frac{\text{variation of work corresponding to a change dw}}{\text{corresponding variation of semi-vis viva}} = \frac{\omega_1 - \omega_2}{\omega_1 \omega} = k,$$

How will the work of the engine be affected when $k \leqq 1$; > 1 < 2; > 2

HEAT (*Paper II.*)

AFTERNOON, 2 P.M.

1. The travel of a slide valve is 8-ins., the steam-lap 2-ins., the exhaust lap $\frac{1}{4}$-in., the angle of advance 30°; construct a Zeuner's diagram shewing positions of crank at admission, cut-off, release of steam and closing of exhaust. Also find the lead, range of expansion and range of compression.

2. Make a sketch of Meyer's valve gear and describe its action.

The main valve cuts off at .75, the lead is 15°, the travel is 6-in.; the greatest distance between the centres of the main and expansion valves is 3-in.; the width of the main valve port is $1\frac{7}{8}$-in.; find the angular advance of the main and cut-off eccentrics, the throw of the cut-off eccentric, and determine the distance between the centres of the valves at half-stroke.

3. State the object and explain the action of a steam jacket. What precautions must be observed so that the steam may be kept saturated by means of the jacket?

4. Describe, *with sketches*, a surface condenser.

The temperature of the exhaust steam in a jet and a surface condenser is 150° F., the temp. of the hot well is 125° F, and of the condensing water 60° F. Twice as much water is required with the surface as with the jet condenser. What is the rise of the temperature of the circulating water in the former?

5. An engine indicating 75 H. P., and making 100 revols. per min. works against a constant resistance. The max. variation of work in any portion of a revolution is $\frac{1}{5}$th of the work per stroke, find the variation in the speed of the flywheel which weighs 3,600-lbs. and is 5-ft. in diar.

6. What is the object of crossing the arms of a governor? State the circumstances which limit the sensitiveness of a governor, and point out the result of over sensitiveness.

7. The weight upon the spindle of a high speed governor with arms and links of equal length is W_1, the weight of each ball is W_2, shew that

$$r^2.g.\left(1+\frac{W_1}{W_2}\right)=v^2.h$$

h being the height of the cone of revolution for the velocity v and radius r.

If the arms and links are 1-ft. in length, and if W_1 = 100-lbs., and W_2 = 2 lb., find the variation in the speed corresponding to a variation of ¼-in., in the distance between the point of suspension and the spindle, the arms being inclined at 30° to the vertical.

EXAMINATION FOR THE DEGREE OF B.A.Sc.

COURSES OF CIVIL, MECHANICAL AND MINING ENGINEERING.

HYDRAULICS.

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner,..... ....HENRY T. BOVEY, M.INST.C.E., F.R.S.C.

1. Water issues horizontally under a head of 5-ft. from an orifice of .001 sq. ft. sectional area, and the jet traverses a point where horizontal and vertical distances from the orifice are 9-ft. and 5-ft., respectively. The discharge is 50 gallons per minute. Find the coefficients of velocity resistance, contraction and discharge.

2. State Bernoullis' Theorem, and the conditions under which it may be assumed to hold good.

3. What is meant by "loss of energy in stock"?

Shew that the velocity of discharge from a cylindrical mouthpiece is $c_v\sqrt{2gh}$, where

$$\frac{1}{c^2_v}=\left(\frac{1}{cc}-1\right)^2+1$$

Assuming suitable values for c_v and c_c determine the discharge and energy of the jet for a 4-ins. mouth-piece under the head of 64-ft.

4. Determine the distance to which N horse-power can be transmitted under the hydraulic head H with a loss of n per cent. by a pipe of diameter d.

Under a pressure of 108,000-lbs. per sq. ft., 100 H. P. is transmitted 20,000-ft. by a 5-ins. pipe. Find the efficiency of the pipe.

5. Why is it advantageous to use a triangular notch in gauging?

The angle of a triangular notch is 90°. How high must the water rise in the notch so that the discharge may be 1,000 gallons per minute?

6. The horizontal sectional area of a reservoir is constant and equal to 10,000 sq. ft. When the reservoir is full, a triangular notch, similar to that in the preceding question and 2-ft. deep is opened. Find the time in which the level of the water falls to the bottom of the notch.

7. What is meant by "hydraulic mean depth?"

The sewers in Vancouver are square in section and are laid with one diagonal vertical. To what height should the water rise so that, (*a*) the velocity of flow may be a max., (*b*) the discharge may be a maximum? (a side of the square = 12-ins.)

8. Shew how to determine the head absorbed by the frictional resistance to flow in a pipe, the motion being steady.

A reservoir of 10,000 sq. ft., superficial area and 100 ft. deep, discharges through a 24-ins. pipe, 2,000 ft. long. Find the velocity of flow in the pipe.

What should be the diar. of the pipe in order that the reservoir might be emptied in 2 hours?

9. The banks of a channel slope at 45°; the flow across a transverse section is to be at the rate of 100 cubic ft. at a maximum velocity of 5-ft. per second. Determine the dimensions of the transverse profile.

10. Shew that in a channel of V section, an increment of 10 per cent. in the depth will produce a corresponding increment of 5 per cent. in the velocity of flow and of 25 per cent, in the discharge.

HYDRAULICS (*Paper II.*)

1. A jet of water moving in the direction A.B. with a velocity of 2 v ft. per sec. is received by vanes moving in the direction BC with a velocity of v-ft. per sec., the angle between the two directions being 15°. Find the direction of the receiving lip of the vane, so that there may be no *shock at entrance*. If the direction of the water is turned through an angle of 90°, find the final velocity. If W is the weight of water received per second, find the useful work per sec., and also the efficiency.

2. Shew how to determine the total mechanical effect of an *overshot* wheel, and explain why it is advantageous to diminish the impulsive effect of the water and to increase its "weight" effect.

3. The sluice for a 10-ft. overshot wheel is vertically above the centre and inclined at 45° to the vertical. The water enters the buckets at a

point 2-ft. vertically below the sluice and 10° from the summit of the wheel. Find the angle between the directions of motion of the entering water and of the wheel's circumference. Also find the velocity of the water as it enters the wheel.

4. Shew that the maximum efficiency of an undershot wheel with plane floats is .5.

Explain the loss of efficiency.

5. Assuming the vane of an undershot wheel of internal diar. 24-ft. and external diar. 26-ft., to be a circular arc, that the tangent to the inner lip is radial and that the tangent to the outer lip makes an angle of 150° with the tangent to the outer circumference, shew that the vane will subtend at the centre an angle of 26° approximately, and find the radius of the vane.

6. Determine the efficiency of the simple form of reaction wheel. Assuming that the horizontal tubes of an ordinary garden sprinkler are open at the ends, and that the axes of the openings are tangential to the circular path of their centres, find the no. of revolutions per min., the useful work per revolution and the reaction on each tube, the head of water over the openings when closed being 50-ft. (efficiency of wheel = $\frac{1}{2}$)

EXAMINATION FOR DEGREE OF B.A.Sc.

COURSE OF CIVIL ENGINEERING.

HYDRAULICS (*Advanced*).

THURSDAY, MARCH 27TH :—MORNING, 9 TO 12.

Examiner,..... .....HENRY T. BOVEY, M.INST.C.E., F.R.S.C.

1. What is meant by *whirling* and *radial* velocity?

Assuming the whirling velocity at the outlet orifices to be nil, shew that the efficiency of a turbine is

$$2.\frac{d_2}{d_1}\cot\gamma \div \left(\tan\beta\ 2\frac{d_2}{d_1}\cot\gamma\right)$$

2. What does $p_1 > p_2$ indicate? What $p_1 < p_2$? If $p_1 = p_2$ and $d_2 = \frac{1}{2}d_1$, shew that

$$\frac{r_2^2}{r_1^2} = 4.\frac{\text{sin. }\gamma\ \text{cos. }(\beta-\gamma)}{\text{sin. }\beta}$$

and that

$$\cos\alpha\sin\beta\ \sin(\alpha-\beta-2\gamma) = 0$$

3. An inward flow turbine has an internal diar. of 2-ft. and an external diar. of 3-ft.; it passes 12 cub ft. of water under an effective head of 40 ft.; find the number of revols. per minute, the power, and the guide angles, neglecting friction.

4. Deduce the following relation for the flow through a pipe of variable diar., and state all the assumptions you make:—

$$z\,\frac{p}{w} + \frac{v^2}{2g} + 2\int \frac{F\,(v).\,ds}{w\,r} = \text{a const.}$$

5. If a pipe of constant diameter has a uniform way service, shew that the head consumed is approximately *three* times less than would be the case if the water were discharged at the end.

6. Two reservoirs are connected by a 12-ins main 20,000-ft. long. The water in the upper reservoir stands at 300-ft. above datum, and in the lower reservoir it stands 100-ft. above datum. A 10,000-ft. branch, 12-ins. in diar., leads from the middle point of the main to a third reservoir in which the water stands 200-ft. above datum. Discuss the distribution.

7. Shew that with a steady varied motion of water in a stream of rectangular section,

$$\frac{dh}{ds} = \frac{\frac{f}{m}\cdot\frac{u^2}{2g}}{1 - a\cdot\frac{u^2}{g}\cdot\frac{s}{A}}$$

Discuss the case in which $h > \frac{a\,u_2}{g}$

METEOROLOGY.

SATURDAY, MARCH 22ND:—9 TO 11 A.M.

Examiner, ...C. H. MCLEOD, M.A.E.

1. Name the three thermometer scales in extensive use, and compare them. (*a*) What are the advantages and disadvantages in the use of mercury as a thermometric liquid? (*b*) Explain the process of graduating a thermometer. (*c*) The boiling points of the several scales do not indicate precisely the same temperature. Why is this?

2. Describe the construction and use of the black bulb thermometer for the measurement of solar radiation.

3. Describe the construction of a standard mercurial barometer.

4. Describe the formation of (*a*) dew, (*b*) hoar-frost, (*c*) fog, (*d*) clouds; and give a classification of the latter.

5. How is rain measured? What precautions are necessary to ensure a good exposure of the gauge and no loss of water?

6. Show by a sketch a solar halo with parhelia, marking on it the principal dimensions.

7. Explain cloud colouring, and the change of tint due to increased or diminished altitude of the sun.

NOTE.—In addition to passing on this paper, Candidates are required to correctly make and reduce such observations as are recorded at first class stations.

FIRST YEAR.

FREEHAND DRAWING.

WEDNESDAY, APRIL 16TH:—2 TO 5 P.M.

Examiners,..... .... { C. H. McLEOD, MA.E. / A. T. TAYLOR, F.R.I.B.A.

1. Draw from the flat a copy of the ornament exhibited, reduced to about one-quarter size.

2. Make a drawing of the group of objects before you:—A skeleton cube and a cone standing on a cylinder.

3. Make a drawing of the pattern for a pillow-block, as seen from your point of view.

FIRST AND SECOND YEARS.

FREEHAND MAP LETTERING.

FRIDAY, MARCH 28TH:—2 TO 5 P.M.

1. Print the words "Map of Canada" arranged as a title and without a copy. "Map" to be in block letters and "Canada" in Egyptian shaded.

2. Print as a title "McGill College, Montreal," using the Italic Alphabet given you as a copy. The whole to be in open letters, and the word Montreal wholly in capitals.

SECOND YEAR.

MOULDING AND FOUNDING.

TUESDAY, JAN. 21ST :—3 TO 5 P.M.

Examiner,.....C. H. McLEOD, MA.E.

1. What are the uses of coal dust and black lead in moulding? How are such materials prepared?

2. Describe, carefully, the moulding and casting of a large pipe.

3. What is the composition of moulding loam for the various purposes for which it is employed? What materials are sometimes mixed with it, and for what purpose?

4. Describe, in detail, the formation of a mould for a steam cylinder

5. How is the box for a chilled roller formed, and what special precautions should be adopted in order to get the purest portion of the iron on the outside?

6. Describe the melting of iron in crucibles, and make a sketch of a suitable furnace.

7. State what you know of the composition of bronzes for various purposes.

8. How are large masses of molten iron moved? Sketch the appliances necessary.

Note:—In addition to passing on this paper, Students are to prepare a descriptive essay on the fittings and methods of carrying on the work of a foundry, preferably the description of a well equipped foundry.

COURSE OF MECHANICAL ENGINEERING.

SECOND YEAR.

MECHANICAL WORK.

FRIDAY, MARCH 28TH :—MORNING, 9 TO 12.

Examiner,.....C. H. McLEOD, MA.E.

1. What are the essential features of lathe tools for use on (*a*) wrought iron, (*b*) cast iron, (*c*) brass? How should they be presented to the work? Make a sketch of a tool-holder.

2. Describe the process of hand chasing. How is the chaser formed? Sketch a chaser for (*a*) inside work, (*b*) outside work.

3. How is work usually centred? Sketch and describe a centering machine. What is the square centre used for?

4. If you were required to bore a number of lever arms, all having the holes the same distance apart, explain carefully how you would do the work.

5. What are the essential features governing the form of a reamer? Explain carefully the process of manufacturing reamers.

6. Explain the use of (*a*) slotting or keyway drills, (*b*) pin drills.

7. Explain, in detail, how to make a lathe tool.

8. Sketch the ends of a connecting rod. Explain briefly how to fit the rod to an engine.

9. What is a "drift," and what do you say as to its use?

10. What are the principal tools required for vise-work? Show by a sketch, a chipping chisel for use on wrought iron.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

SATURDAY, MARCH 29TH:—MORNING, 9 TO 12.

Examiner,.....C. H. McLEOD, MA.E.

1. From a given point draw a straight line which would, if produced, pass through the point of intersection of two inclined lines, the apex of which is inaccessible.

2. The focus of a parabola is half an inch from the directrix. Draw a portion of the parabola.

3. Draw the plan and elevation of an hexagonal prism of 1 in. side and 3 in. altitude. The axis is inclined at 45° to the horizontal; an edge of an end is in the horizontal and makes an angle of 30° with the vertical plane. (*a*) Show the section caused by a plane passing from one angle of an end of the prism to the diagonally opposite angle of the other end and being perpendicular to two sides of the prism.

4. A cylinder penetrates a cone. The altitude of the cone is 3 in. and the diameter of its base 3 in. The diameter of the cylinder is 1.5 in. Their axes are at right angles and meet at a point 2 in. from the apex of the cone. Draw a plan and elevation showing the lines of penetration. (*a*) Develope the surface of the cone and one end of the cylinder.

5. Project isometrically a cube of 2 in. side. (*a*) Prove the truth of the method.

6. Find the horizontal projection of an angle of 90° when the containing lines make angles of 30° and 45° respectively with the horizontal. (*a*) Show the vertical projection of this angle on a plane containing one of the lines.

7. The horizontal traces of two planes are parallel and meet $x\,y$ at an angle of 60°. The vertical traces form, with $x\,y$, an equilateral triangle. Give the plan and elevation of the line of section. (*a*) Find the angle between the planes.

8. Find the traces of a plane which makes an angle of 60° with the horizontal, and 75° with the vertical plane of projection.

SECOND YEAR.

SURVEYING.

TUESDAY, APRIL 1ST:—9 to 12 A.M.

Examiners,..... { C. H. McLEOD, MA.E. / W. J. SPROULE, MA.E.

1. Run a line of levels from station 1 to station 4, setting the instrument on the arms A and B, and turning on station 3. (*a*) Check the reduction of your notes.

2. Is the horizontal axis of the transit instrument on arm C, level when the horizontal plate is level? If not, which is the high end? (*a*) How does an error of this kind affect the use of the instrument?

3. Suppose an instrument is required to be constructed after the manner of the optical square, to set out angles of 45°. Show how you would place the mirrors. Prove it.

4. Explain how you would range out a "picket" line through a wooded country. If the country is undulating, how would you proceed in crossing a valley or in carrying the line over a hill?

5. Express in degrees the bearing N E by N. How would you renew the magnetism of a needle? What do you understand by magnetic dip? How does dip affect land surveying operations? Why is it desirable, in a compass survey, to observe the bearing of all lines from both ends?

6. Explain the process of calculating the area of an angular survey by the method of latitudes and departures. (*a*) Suppose the boundaries of the survey do not coincide with the survey lines, how do you proceed?

7. When an angle is to be measured with great accuracy by a theodolite, both verniers are read and the mean taken, the angle is measured in

opposite directions by several repetitions in both positions of the telescope and sets of measurements are made, beginning at different points on the circle. Explain the reason of these precautions.

8. What is the essential adjustment of a level? What precaution do you adopt in levelling in order to eliminate the effect of any outstanding error of adjustment? Suppose the rings of a Y level be unequal, in what condition will the instrument be after the usual (Y) adjustments are made? How would you adjust such an instrument?

9. Show how to use the plane table in a progression or traverse survey.

10. Lines on a railway location making an angle of 25° 30′ are to be united by a 4° curve. Calculate the tangents, and give a set of notes for running out the curve. The tangent bearing is 123° 36′, and the chainage 37 + 40 at the B. C. The instrument is to be set at station 41.

XI. State briefly the principal uses of the prismatic compass and any cases where its use is convenient.

NOTE:—Questions 1 and 2 are instrumental. No Candidate will be allowed to use either instrument for more than ten minutes.

SECOND YEAR.

MECHANISM.

WEDNESDAY, APRIL 2ND:—9 TO 12 A.M.

Examiner.....C. H. McLeod, M.A.E.

1. Given the directions of motion of two points in a body, both directions being in the same plane, find the direction of motion of a third point. (*a*) What is the ratio of the velocity of the points.

2. Sketch the dead-beat escapement for a clock, and explain its action.

3. The distance between the centres of rotation of the driving pin and slotted bar, in a Whitworth shaping machine, is 4 in., and the radius of the pin 12 in. Find, graphically, the ratio of the times of advance and return. (*a*) Express the angular velocity ratio of the bar and the pin, at any instant.

4. Find the position of the parallel point in Watt's parallel motion, and show how to determine the extent of its deviation.

5. The pitch circles of two wheels are 8 in. and 12 in. diameter, and have respectively 16 and 24 teeth. The arc of contact is $\frac{1}{2}p$ in approach and $\frac{3}{4}p$ in recess. Obtain the point and root circles and mark the path of contact, (*a*) for epicycloidal teeth, (*b*) for involute teeth, when the inclination of the tangent to the base circles is 20°.

6. There is an epicyclic train in which the wheel A has 30 teeth, B 20 teeth and C 40 teeth. In one second A makes + 2 revolutions and the arm — 3. Find the number of revolutions made by B and C in the same time.

7. Show by sketches three methods of reversal suitable to a plainer.

8. Show how to apply the lazy tongs to the reduction of motion.

9. Explain the action of a coupling or joint to connect parallel axes in which an arm turning about its centre in one axis works in a rectangular cross centred on the other axis.

THIRD YEAR.

DESCRIPTIVE GEOMETRY.

SATURDAY, MARCH 29TH :—MORNING, 9 TO 12.

Examiner,.....C. H. McLEOD, MA.E.

1. One diagonal of an octahedron of 2 in. edge is inclined at 30° and an adjacent edge is inclined at 45°. Draw its plan and an elevation on a plane not parallel to any edge of the solid.

2. Given the projections of a sphere and an external point, find the projections of the circle of contact of the cone which envelopes the sphere and has the given point for its vertex. The axis of the cone is not to be parallel to either of the planes of projection.

3. The axis of an hyperboloid is vertical, the generating line is inclined to the horizontal at 45°, and the radius of the throat circle is 0.5 in. Find the projection on the vertical plane.

4. The vertical axis of an ellipsoid measures 3 in. and a horizontal diameter 2 in. The horizontal section of a cylinder is a circle of 1.5 in. diameter, and its axis makes an angle of 60° with the horizontal and 20° with the vertical. The cylinder penetrates the ellipsoid so that the common perpendicular to the axes of the solid measures 0.2 in. Find the projections of the lines of penetration.

5. The projections of rays make angles of 30° with xy, find the shadow cast on the horizontal by the object in question (1) or question (2).

6. Explain the polyconic method of map construction, and show how this is modified in the equidistant polyconic.

7. Project perspectively a cylindrical shaft of 10 ft. height and 4 ft. diameter when standing on an octagonal plinth of 2.5 ft. side. One face of the plinth makes an angle of 30° with the picture plane.

8. Find the perspective of a pentagonal pyramid, when one angle is in the foreground and 6 ft. on the right.

9. Find the perspective of the shadow in either question (7) or (8) Direction of the rays at pleasure.

Civil Engineering students may omit questions 2 or 3 and questions 7 or 8.

Mechanical Engineering students may omit question 6 and questions 7 or 8.

Mining Engineering students may omit questions 5, 6 and 9.

THIRD YEAR.

SURVEYING.

TUESDAY, APRIL 1ST, 1890:—9 TO 12 A.M.

Examiners, ... { C. H. McLEOD, M.A.E. / W. J. SCHOLES, M.A.E.

1. Examine vernier B of the transit instrument, and say if it overruns or underruns, and to what extent approximately. (*a*) How would you determine the correction for run accurately?

2. Measure the angle at arm C between A and B Make three sets of three repetitions, in each of the reversed positions of the instrument. (*a*) Give the reasons for this method of work.

3. In angular levelling, where reciprocal and simultaneous observations are made, prove that the difference in elevation

$$h = k.\ \frac{\sin.\ \frac{1}{2}\ (\Delta' - \Delta\ \ )}{\cos.\ \frac{1}{2}\ (\Delta' - \Delta + 0)}$$

where k = chord distance, Δ and Δ' = zenith distances and 0 = angle subtended at the center of the earth by k. (*a*) If the instruments are set at a lower level than the station signals how are the observed angles corrected?

4. Describe the construction of an instrument suitable for precise levelling. (*a*) State what instrumental constants must be known in using such an instrument, and show how to determine them. (*b*) Explain carefully the field methods of precise levelling.

5. Describe the construction of the solar attachment to the engineers transit theodolite, and explain its use in the determination of the meridian.

6. How are stations made visible at great distances? (*a*) Corrections are sometimes necessary on account of the eccentricity of the station observed from or pointed at. Give an example of each case and express the value of the correction.

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7. Suppose the measured value of the three angles of a triangle have largely different probable errors, how would you adjust them?

8. Explain the surveying of a long coast line from the water, using a large ship for the purpose.

9. Obtain the values of the coefficients A, B and C in the equation

$$a = T + \Delta T + Aa + Bb + Cc.$$

or the astronomical transit.

(*a*) Four stars were observed at Montreal on March 15th, 1890 Determine the error of the clock. Clock rate zero; $b = -0.31$ s.

	Lamp East.		Lamp West.	
A	−0.56	+0.45	+0.64	−0.99
B	+2.00	+0.97	+0.78	+2.43
C	+2.07	+1.07	+1.00	+2.62
T	$8^h\ 21^m\ 36^s.74$	$8^h\ 26^m\ 48^s.22$	$8^h\ 50^m\ 0^s.40$	$9^h\ 1^m\ 9^s.90$
a	8 21 8.35	8 26 21.30	8 4 35.25	9 0 44.47

X. In running a railway location line from A to B on a tangent, and continuing from B to C on a curve, an obstacle is encountered at B, making the point of beginning of curve inaccessible and invisible. Give your method of passing the obstruction and continuing the line.

THIRD YEAR.

MACHINERY.

(*Riveted Joints and Gearing.*)

FRIDAY, APRIL 11TH:—9 TO 12 A. M.

Examiner,..... .... C. H. McLEOD, M.A.E.

1. Discuss the condition of greatest economy of material in a riveted joint.

2. What is the efficiency of a properly designed riveted joint? How does the manner in which the holes are made affect the efficiency? How would the use of elliptical rivets increase the efficiency?

3. Suppose the teeth of two wheels to gear, so that the pressure is at times restricted to a small portion of the edge of the tooth. Show that $P = \frac{1}{3}\frac{f t^2}{n}$ where f is the greatest safe stress, t the thickness of the teeth,

n a fraction lying between 0.5 and 1.0; and P the whole pressure transmitted.

4. Explain an approximate method of drawing cycloidal teeth by arcs of circles.

5. Show how, for a given velocity ratio, the inclination of the teeth is found, in screw gearing. (*a*) Show the relation between the circular velocities and the velocity of transverse sliding of the teeth.

6. Design a cylindrical wrought iron boiler of 3 ft. diameter for a working stress of 100 lbs. Show all the joints and other details to scale.

THIRD YEAR.

GEOMETRY OF MACHINERY.

MONDAY, FEB. 10TH :—MORNING, 9 TO 12.

Examiner, ...C. H. McLEOD, M.A.E.

1. A four foot crank has a twelve foot connecting rod, at what position of the stroke is the velocity of the cross-head a maximum?

2. The distance between the centres of rotation of the driving pin and slotted-bar in a Whitworth shaping machine is 4 in. and the radius of the pin 12 in. Find, graphically, the ratio of the times of advance and return. Express the angular velocity ratio of the bar and the pin at any instant.

3. The pitch circles of two wheels are 8 and 12 in. diameter and the number of teeth 24 and 36. The arc of contact is $\frac{1}{2}p$ in approach and $\frac{3}{4}p$ in recess. Obtain the point and root circles. Mark the path of contact, (*a*) for epicycloidal teeth, (*b*) for involute teeth, inclination of path of contact 15°, (*c*) what is the extent of sliding?

4. Obtain the horse power from the accompanying diagram, area of piston 100 sq. in., stroke 36 in., revolutions 100 per minute, steam scale 60.

5. Show that the velocity ratio is constant and unity in the Oldham coupling. What is the angular velocity of the cross? Why?

6. Show how to arrange Hooke's coupling to transmit uniform motion?

7. The angle between the projections of the axes of two shafts is 60° and the length of the common perpendicular 20 in. Determine the pair of rolling hyperboloids to connect the axes at a velocity ratio of 2 : 3.

8. Construct one of a pair of three lobed wheels, the angle of change being 15° and the mean radius 2 in., also a two lobed wheel to work with it.

9. Given the middle and extreme position for the two levers of a Watt's parallel motion as in the accompanying diagram. Find the radii of the levers, so that the link connecting them shall deviate through equal angles from the perpendicular to the mean position of the arms. (*a*) Prove the truth of the method.

FIRST YEAR.

CHEMISTRY.

TUESDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. How is the expression $M = d \times 28.88$ deduced?

2. Distinguish briefly between the six systems of crystallography, giving the name of each system.

3. How is Hydrofluoric Acid prepared? What are its properties?

4. What volume of Carbon Dioxide at 15° C. and 740 mm. can be obtained by treating 50 grams of Acid Sodium Carbonate with excess of Sulphuric Acid?

5. If Potassium Nitrate and Sodium Nitrate sold at the same price per lb., which would be the cheaper substance to employ in making Nitric Acid? Give the exact ratio between the values.

6. State what you know with regard to the occurrence of Boron and Silicon in nature.

7. How is Caustic Potash made?

8. How would you distinguish a Citrate from a Tartrate, a Carbonate from an Oxalate, a Phosphate from a Sulphate, a Bromide from a Chloride?

9. Distinguish between normal, acid, and double salts, giving examples of each.

10. What are the chief characteristics of base-forming elements?

SECOND YEAR (*Chemistry and Mining Courses*).

(Answer only ten questions.)

CHEMISTRY.

TUESDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Distinguish between oxydising and reducing agents, and give several examples of their action.

2. How much Tartaric Acid must be employed to convert 40 grams of Sodium Carbonate into Tartrate? What volume of Carbon Dioxide will be given off?

3. How may Nitrates be detected in presence of Iodides, and Chlorates in presence of Nitrates?

4. Explain carefully the separation of the metals of group V.

5. The Chlorine gas evolved by treating 100 grams of Manganese Dioxide with Hydrochloric Acid is passed into a solution of Potassium Iodide. How much Iodine will be liberated?

6. Chromic Oxide is fused with Sodium Carbonate and Sodium Nitrate. What takes place? Give the equation.

7. How are Cadmium and Copper separated?

8. Give the names of the following substances:—$AgNo_2$, $Fe(SO_4)_3$, $H_3FeC_6N_6$, K_3CoCy_6, BiOCl.

9. Explain the constitution of basic salts, and calculate the percentage of Lead in Basic Lead Nitrate.

10. Define polymerism, isomerism and metamerism. Give examples.

11. Distinguish between Primary and Secondary Alcohols, giving examples.

12. Give Liebig's test for Hydrocyanic Acid.

13. What are the characteristics of the Aldehydes? What their characteristic group?

THIRD YEAR.

(*Mining Course.*)

CHEMISTRY.

TUESDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Explain the principles of volumetric analysis.

2. If five grams of Potassium Permanganate are dissolved in a litre of water, to how much Iron will each cubic centimeter correspond?

3. How would you make a quantitative analysis of a specimen of Bornite?

4. What quantities of Sulphuric Acid and Sodium Chloride must be used to obtain sufficient Hydrochloric to neutralize 5.4 grams of Sodium Carbonate?

5. What takes place (*a*) when Hydric Sulphide is passed into an acid solution of Ferric Chloride, and (*b*) when Potassium Cyanide is added in excess to an aqueous solution of Cobalt Chloride?

6 The quicklime produced by igniting a precipitate of Calcium Oxalate weighed 0.25 gram. What was the corresponding weight of Calcium Oxalate and also the weight of Ammonium Oxalate employed in precipitating the latter?

7. How many litres of Chlorine gas must be passed into a solution containing 50 grams of Potassium Bromide in order to liberate all the Bromine?

8. How would you distinguish a Sulphite from a Thiosulphate, a Borate from a Phosphate, a Nitrate from a Chlorate?

B.A. Sc. EXAMINATION (*Chemistry Course*).

ASSAYING.

WEDNESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner, ...B. J. HARRINGTON, B.A., PH.D.

1. Into what classes may the reagents used in assaying be divided? Give examples of each.

2. Explain the derivation of the Assay Ton weight.

3. How would you determine the amount (*a*) of Antimony and (*b*) of Silver in a specimen of Argentiferous Stibnite with Quartz gangue?

4. Name any metals that interfere with the assay of Copper ores by the Cyanide process, and state the precautions to be taken when they are present.

5. How would you estimate the Zinc in a specimen of Zinc Blende (*a*) gravimetrically, and (*b*) volumetrically?

6. How would you make a Silver Assay of a specimen consisting largely of Copper Pyrites and Nickeliferous Pyrrhotite?

7. How may the quantity of gold in an Auriferous Mispickel be determined?

8. How may the total Iron and the Ferrous Iron be estimated in an ore consisting of Magnetite mixed with Ferriferous Hornblende?

9. An ore consists of a mixture of Galena and Calcite. How may the percentage of Lead be determined in the wet way?

10. Describe the Chlorination assay for Gold.

11. How would you ascertain the value of the ores represented by the specimens before you?

METALLURGY.

THURSDAY, APRIL 3RD :—AFTERNOON, 2 TO 5.

Examiner,..... .... B. J. HARRINGTON, B.A., PH D.

1. Arrange the following metals in the order of their densities :—Iron, Silver, Aluminum, Platinum, Lead, Copper, Magnesium, Mercury.

2. Briefly describe the ores of Iron, giving the theoretical percentage of metal in each, and stating what you know in regard to their relative value.

3. Give a front elevation and vertical longitudinal section of a puddling furnace. Also briefly describe the puddling process.

4. Describe the Siemens regenerative gas furnace and the Siemens-Martin process for the manufacture of Steel.

5. What are the causes determining the production of grey or white Iron in the blast furnace.

6. Explain the terms Weld Metal and Ingot Metal.

7. What are the ordinary impurities in Steel? What their effects upon the Steel?

8. Upon what does the strength of Iron castings depend?

9. Explain each of the following terms :—Cementation, Fettling, Tap Cinder, Scouring Cinder, Spiegeleisen.

10. Give the composition of the more important ores of Copper. Explain also the principles involved in their reduction.

11. Give the properties of metallic Silver, and characterize briefly the more important process for its extraction.

12. Explain the reduction of Zinc from its ores by the Belgian process.

THIRD YEAR (*Mining Course*).

MINING.

FRIDAY, APRIL 11TH :—MORNING, 9 to 12.

Examiner,..... .....B. J. HARRINGTON, B.A., PH.D.

1. Discuss the origin of metalliferous lodes and the variations observed in them at different depths.

2. What are the merits of dynamite as compared with other blasting agents? What do you understand by Dynamite No. 2?

3. Describe the exploitation of a thick lode with high inclination.

4. State what you know with regard to the employment of electricity for lighting mines.

5. Explain the conditions upon which natural ventilation in mines depends. Describe also some of the simplest and best methods of supplying air to miners while sinking shafts and driving levels.

6. Biram's Anemometer. Describe its construction and use.

7. What precautions should be observed in the employment of iron and steel ropes for hoisting?

8. Give sketches of several of the best forms of safety-catch employed in mines.

9. What is tubbing? Point out the relative merits of the different kinds.

10. How are shafts sunk through quicksands?

B.A.Sc. EXAMINATION (*Chemistry Course*).

CHEMISTRY.

TUESDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. The percentage composition of a body is, Carbon 24.24, Hydrogen 4.04, Chlorine 71.72. Calculate the formula, knowing that the specific gravity of the vapour is 49.5.

2. How would you estimate the quantity of Albumenoid Nitrogen in a water?

3. What is the Iodine absorption of an oil? How is it determined?

4. How is the melting point of a fat ascertained?

5. Distinguish between soluble, reverted and insoluble Phosphoric Acid in a manure, and state briefly how each is estimated.

6. How would you estimate the Albumenoids in a sample of wheat?

7. How would you make an analysis of a sample of commercial White Lead?

8. State any precautions to be taken in the quantitative separation of Iron from Manganese, Lime from Magnesia, Potash from Soda.

9. Describe the preparation of Potassium Ferrocyanide and its conversion into Ferricyanide.

10. Into what classes are the Vegeto-Alkaloids divisible? What are the more important chemical reactions of these bodies?

11. Enumerate and classify the principal Carbohydrates.

12. Explain the constitution of the Glycols.

EXAMINATION FOR BRITISH ASSOCIATION MEDAL.

ORGANIC CHEMISTRY.

(*Remsen's "Compounds of Carbon."*)

TUESDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. What are the chief classes of derivatives obtained from Hydrocarbons by treatment with different reagents?

2. Write equations illustrating the action (*a*) of Hydrobromic Acid, (*b*) of Phosphorus Trichloride, (*c*) of Potassium upon Ethyl Alcohol.

3. Show by what reactions it is possible to pass (*a*) from Marsh Gas to Acetic Acid, (*b*) from Ethyl Alcohol to Ethylidene Chloride.

4. Explain the supposed relation of Acetic to Carbonic Acid, and also that of Methyl-Sulphonic to Sulphuric Acid.

5. What do you understand (*a*) by reverse substitution, (*b*) by physical isomerism?

6. How is it possible to replace the six Hydrogen atoms of Benzene successively, and to know that in each case a different atom is replaced?

7. How is Diazo-benzene Nitrate prepared? What are its properties?

8. What explanation has been offered with regard to the existence of two Ethylidene-lactic Acids?

9. State what you know with regard to Acrylic Acid and its affinities.

10. What are the Pyridine Bases?

11. By what reactions may Allyl Alcohol be obtained from Glycerine?

12. State what you know with regard to the mono-substitution products of Napthalene.

BURLAND PRIZE.

CHEMISTRY.

WEDNESDAY, OCT. 15TH :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. What takes place (*a*) when Ammonia-water is added to a solution of Aluminium Sulphate, (*b*) when Zinc is immersed in a solution of Lead Nitrate, (*c*) when Silicon Fluoride is brought into contact with Water? Give equations.

2. Discuss the relationship of Acids, Bases and Salts.

3. State how you would prepare each of the following salts :—(*a*) Ferric Sulphate, (*b*) Chrome Alum, (*c*) Potassium Permanganate, (*d*) Potassium Ferricyanide. Give the formula of each salt.

4. Explain carefully the significance of the terms oxidation and reduction.

5. How may Boric Acid and Boric Anhydride be obtained from Borax?

6. Define Allotropism and Isomorphism, giving examples of each.

7. How is Ethylene prepared? What are its properties?

8. What do you understand by a diatomic Alcohol?

9. State what you know with regard to the composition and properties of Albumin, Fibrin, and Casein.

10. Give constitutional formulæ for Aniline, Acetamide, Glycerine-Methyl Formate, and Acetic Acid.

EXAMINATION FOR BRITISH ASSOCIATION MEDAL.

TECHNICAL CHEMISTRY.

THURSDAY, APRIL 24TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. How may the crystallizable Sugar present in molasses be regained?

2. State what you know with regard to the manufacture and uses of Starch Sugar.

3. How is concentrated Acetic Acid made? What impurities is it liable to contain? How is it purified? What are its chief uses?

4. Describe the Solvay process for the manufacture of Soda, and point out any advantages which it possesses as compared with Leblanc's process.

5. How many kilos. of Soda crystals containing 2 per cent. of impurities can be made from 1 ton of common Salt? What volume of Carbon Dioxide would be necessary to convert the crystals into acid Carbonate, and what weight of the latter would be obtained?

6. What is Weldon's process for the regeneration of Manganese Dioxide?

7. What operations are involved in bleaching cotton cloth? What is Chlorimetry?

8. In the manufacture of Sulphuric Acid why is the theoretical yield not attained? Explain the loss of Nitrous fumes, and state how it may be reduced to a minimum.

9. Name the more important mordants, and give the three principal ways in which the mordant and colouring matter can be put into contact with the fibre.

10 What are the principal impurities in commercial Nitric Acid? How may the Acid be purified?

FACULTY OF MEDICINE.

(For Papers see "Announcement" of Faculty of Medicine)

UNIVERSITY SCHOOL EXAMINATIONS, 1890.

EXAMINATION PAPERS, 1890.

PRELIMINARY SUBJECTS.

READING.

Johnson was in the habit of sifting with extreme severity the evidence for all stories which were merely odd. But when they were not only odd but miraculous, his severity relaxed. He began to be credulous precisely at the point where the most credulous people begin to be sceptical. It is curious to observe, both in his writings and in his conversation, the contrast between the disdainful manner in which he rejects unauthenticated anecdotes, even when they are consistent with the general laws of nature, and the respectful manner in which he mentions the wildest stories relating to the invisible world. A man who told him of a water-spout or a meteoric stone generally had the lie direct given him for his pains. A man who told him of a prediction or a dream wonderfully accomplished was sure of a courteous hearing. "Johnson," observed Hogarth, "like King David says in his haste that all men are liars." "His incredulity," says Mrs. Thrale, amounted almost to disease." She tells us how he browbeat a gentleman who gave him an account of a hurricane in the West Indies, and a poor quaker who related some strange circumstance about the red-hot balls fired at the siege of Gibraltar. "It is not so. It cannot be true. Don't tell that story again. You cannot think how poor a figure you make in telling it." He once said, half jestingly we suppose, that for six months he refused to credit the fact of the earthquake at Lisbon, and that he still believed the extent of the calamity to be greatly exaggerated. Yet he related with a grave face how old Mr. Cave of St. John's Gate saw a ghost, and how this ghost was something of a shadowy being. He went himself on a ghost-hunt to Cock Lane, and was angry with John Wesley for not following up another scent of the same kind with proper spirit and perseverance. —MACAULAY.

WRITING.

MONDAY, 2ND JUNE, 1890 :—10.45 TO 11 A.M.

Examiner..... ELSON I. REXFORD.

1. Write (*a*) your name in full, (*b*) the day, month and year of your birth, (*c*) your post office address.

2. Write the following sentence:—The Protestant Committee of the Council of Public Instruction is composed of ten regular members, six associate members and the Superintendent.

3. Write the letter "l" ten times without removing the pen from the paper. Write in the same manner the letters h, o, f, d.

4. Give any additional specimen of your handwriting.

DICTATION.

MONDAY, JUNE 2ND:—MORNING, 10 TO 10.45.

The rush of the water and the booming of the mill bring a dreamy deafness, which seems to heighten the peacefulness of the scene. They are like a great curtain of sound, shutting one out from the world beyond. And now there is the thunder of the huge covered waggon coming home with sacks of grain. That honest waggoner is thinking of his dinner getting sadly dry in the oven at this late hour; but he will not touch it till he has fed his horses,—the strong, submissive, meek-eyed beasts, who, I fancy, are looking mild reproach at him from between their blinkers, that he should crack his whip at them in that awful manner as if they needed that hint! See, how they stretch their shoulders up the slope towards the bridge, with all the more energy because they are so near home. Look at their grand shaggy feet that seem to grasp the firm earth, at the patient strength of their necks bowed under the heavy collar, at the mighty muscles of their struggling haunches! I should like well to hear them neigh over their hardly earned feed of corn, and see them, with their moist necks freed from the harness, dipping their eager nostrils into the muddy pond. Now they are on the bridge, and down they go again at a swifter pace, and the arch of the waggon disappears at the turning behind the trees Now I can turn my eyes towards the mill again, and watch the unresting wheel sending out its diamond jets of water. That little girl is watching it too: she has been standing on just the same spot at the edge of the water ever since I paused on the bridge. And that queer white cur with the brown ear seems to be leaping and barking in ineffectual remonstrance with the wheel; perhaps he is jealous because his playfellow in the beaver bonnet is so rapt in its movement. It is time the little playfellow went in, I think; and there is a very bright fire to tempt her; the red light shines out under the deepening grey of the sky. It is time, too, for me to leave off resting my arms on the cold stone of this bridge.—GEORGE ELIOT.

N.B.—The examiner will read the extract *three* times, the candidates writing it out during the *second* reading. The first and third readings are respectively intended to give the candidates a general idea of the nature

of the passage, and to guide them in punctuating. As it is of great importance that candidates should not be left in a state of uncertainty, the examiner may, if he thinks it necessary, repeat, on request, any word or phrase. The examiner will mention the conclusion of each period when the candidates are writing.

ENGLISH GRAMMAR.

MONDAY, JUNE 2ND:—AFTERNOON, 3 30 TO 5.

Examiners,..... CHAS. E MOYSE, B.A.
REV. J. HEPBURN, M.A.
PAUL T. LAFLEUR, M.A.
REV. E. A. W. KING, M.A.

[Answer *two* questions, and not more, from each of the groups (A) and (B). *Group* (C) *must be attempted by all.* Be careful in lettering and numbering your answers.]

A.

1. (*a*). Show that each vowel has more than one sound. (*b*) Show that *w* may combine with a preceding vowel to form a diphthong and also a simple vowel sound. (*c*) Write words to show the hard and the soft sound of *c*, *ch* and *g* respectively.

2. Write (*a*) the plural of chimney, bush, buoy, genus, and state general rules which apply to the plurals you have just written; (*b*) the feminine of nephew, abbot, peacock, governor; (*c*) the possessive of trees, men, sisters-in-law, teeth.

3. Classify the following pronouns and write one sentence in which all of them are used:—who, some, ye, yours. (*b*) Add another pronoun to each of the classes you have just mentioned. (*c*) Distinguish between the uses of *that* in,—That book—That altered our plans—Do get out of the way, that's a good fellow.

B.

1. Explain the following terms and give one example of each:—impersonal verb, predicative adjective, ordinal numeral, prefix, gerund, elliptical sentence, collective noun, derivative.

2. (*a*) Distinguish between a Strong and a Weak Verb; a Perfect and an Imperfect Tense; a Clause and a Phrase. Give one example of each. (*b*) Change the verbs in the following sentences into the corresponding passive forms: They had not calculated the result. The labourers will have excavated the ditch before nine o'clock this evening. The farmers

will be putting the hay into the barn next week. We were making baskets when John shot the bird.

3. (*a*) Write a sentence in which you use a simple preposition denoting *time*, another denoting *place*, and a third denoting *cause*. Indicate each. (*b*) Treat the simple adverb in the same manner. (*c*) Write the comparative and superlative of the adverbs well, much, forth, long. (*d*) Distinguish between a conjunctive adverb and a conjunction, and illustrate their use.

C.

1. (*a*) Write brief sentences in which a noun in the objective case is used (*a*) as the direct object of a transitive verb; (*b*) as the indirect object of a transitive verb; (*c*) as the complement of a transitive verb of incomplete predication; (*d*) as a cognate accusative (or objective); (*e*) in apposition to a noun in the objective case.

(*b*) Of what parts of speech may the simple subject of a verb consist? Give one example of each. Mention the different kinds of complex subject. Give one example of each.

2. (*a*) Parse: Run quickly, as you wish to catch the train.

(*b*) Analyse: The large white house stands on the top of the hill, and you will see it presently. If you say so, it must be true.

ARITHMETIC.

MONDAY, JUNE 2ND:—AFTERNOON, 2 to 3.30.

Examiners, ... { REV. PRINCIPAL ADAMS, D.C.L. / G. H. CHANDLER, M.A.

Only two questions in each division to be answered.

I.

1. A metre being 39.371 inches, show that a kilometre (*i.e.*, 1000 metres) is .621385$\dot{7}\dot{3}\dot{2}$ of a mile.

2. How many times can you subtract 3.02 from 206.024, and what is the remainder?

3. Divide $\frac{1}{2} + \frac{1}{8} + \frac{1}{4}$ by $\frac{1}{9} + \frac{1}{6} + \frac{1}{3}$, reducing the result to its lowest terms.

II.

4. By selling an article for $72.25, fifteen per cent. is lost; what was the cost?

5. What principal will amount to $838 in 19 months at 3 per cent. per annum, simple interest?

6. Find the square root of 210.25, of .4 and of $\frac{5}{7}$.

III.

7. A dividend of 4½ per cent. gives $36 on a $1100 investment; at what premium was the stock bought?

8. How much water must be mixed with 12 gallons of syrup worth 75 cents per gallon, and 25 gallons worth 72 cents per gallon, in order that the mixture (of the three) may be worth 60 cents per gallon?

9. Three men *A*, *B* and *C*, rent a pasture for $120; *A* puts in 27 cows for 60 days, *B* 35 for 20 days, and *C* 46 for 80 days; how much is each man to pay?

GEOGRAPHY.

MONDAY, JUNE 2ND:—MORNING, 9 TO 10.

Examiners,..... { REV. J. HEPBURN, M.A. / CHAS. E. MOYSE, B.A. / PAUL T. LAFLEUR, M.A. / REV. E. A. W. KING, M.A.

I.

(Answer *two* questions, and not more, from each group.)

1. Define geography, latitude, tropics, zone, oasis, watershed, plateau, planets, delta, estuary.

2. Describe briefly "Our Solar System."

3. Distinguish the five principal sections of the human race; and enumerate the religions of the world according to the number of professed adherents.

II.

1. Name and describe the courses of the great rivers of North America which rise very near together in the Rocky Mountains.

2. Name the Lakes of North America. Describe also some of its great natural wonders.

3. Enumerate the States and Territories of which the American Republic is comprised, giving their Capitals.

III.

1. Name the animals of Europe and Oceania; give the rivers of Europe and the mountains of Asia.

2. Name the colonies and other dependencies of the British Empire, describing briefly Canada, St. Helena, and New Zealand.

3. Where and what are Lomond, Titicaca, Popocatapetl, Eskimos, Passamaquoddy, Caribbean, Trinidad, Finisterre, Dardanelles, Pyrenees?

BRITISH AND CANADIAN HISTORY.

TUESDAY, JUNE 3RD :—MORNING, 9 TO 10.30.

Examiners,..... .... { PAUL T. LAFLEUR, M.A. / REV. J. HEPBURN, M.A. / CHAS. E. MOYSE, B.A. / REV. E. A. W. KING, M.A.

(N.B.—Not more than *two* questions from each division are to be answered.)

I.

1. Name in their order, and with dates, the first five French governors of New France. Outline the governorship of any one.

2. Make short notes upon each of the following, and add the date of any important event connected with the name: Cabot, Laval, Montgomery, Chrysler's Farm, St. Eustache.

3. Give the name and date of three great constitutional acts, tending to unite the Canadian provinces, since the taking of Quebec. Sketch the leading provisions of any one.

II.

4. Explain what is meant by: Clergy Reserve, Rights of Search, Mason and Dixon's Line, Seigneuries. Show the importance of any two in connection with the history of Canada.

5. Give, *in outline*, a sketch of the reign of Edward III, *or* of that of Henry VIII, and state only important facts.

6. Explain briefly the purpose and leading provisions of:—Petition of Right, Poyning's Law, Habeas Corpus Act, Act of Union, Provisions of Oxford. Give dates.

III.

7. Give the reasons for the Norman invasion of England; state the principal events connected with the establishment of the Normans; *or* explain briefly, but clearly, the chief results of the conquest upon the language, the civil life, and the military organisation of the English.

8. Write a short account of the attempt of the young Pretender.

9. Write short notes on: Walpole, Warwick, Hampden, Algernon Sidney, Thomas Cromwell, John Bright.

THE GOSPELS.

MONDAY, JUNE 2ND :—MORNING, 11 TO 12.

Examiners, ... { REV. E. A. W. KING, M.A. / CHAS. E. MOYSE, B.A. / REV. J. HEPBURN, M.A. / PAUL T. LAFLEUR, M.A.

I. (A) In one or two lines, or less, make notes upon :—

1. The principal subject of all the Gospels.

2. The extreme limits of time during which they were written.

3. The language employed.

4. What else the Evangelists wrote.

or

I. (B) This may be answered *instead of but not in addition* to I. (A).

Quote any three consecutive verses of the "Sermon on the Mount," and from elsewhere in the gospels give any single text having reference to prayer; almsgiving; unity; observance of the Sabbath.

II. Enumerate briefly—by one word, if possible—any seven leading facts of our Lord's life, placing first in order such as are the basis of Christian doctrine.

III. Sketch roughly a map of the Holy Land in New Testament times. Mark upon it twelve villages, or towns, or political divisions, or physical features—only twelve names in all.

IV. Which gospels are most alike? State any particulars in which each differs from the rest regarding style, or purpose, or the individuality of the Evangelist.

V. Name (only) any three men for whom miracles were wrought; any three women signally favored by Christ; three persons either commended or blamed by Him; His three closest companions; the apostles who were brothers.

VI. What is a miracle? a parable? Example of each? What is the main subject—it may be stated in four words—of the "Sermon on the Mount?" State, in one word for each, any three of its topics.

VII. Make very brief notes upon these manners or customs of the Holy Land in the first century: 1. Division of time. 2. "Sitting at meat." 3. Dress. 4. Houses. 5. Salutations. 6. Religious sects. 7. Funerals *or* Marriages.

N.B.—Marks deducted for careless writing.

OPTIONAL SUBJECTS.

LATIN.

TUESDAY, JUNE 3RD :—AFTERNOON, 2 TO 5.

Examiners, ... { REV. GEORGE CORNISH, LL.D.
VERY REV. DEAN NORMAN, D.C.L.
A. J. EATON, Ph.D.

N.B.—*The answers to the questions in groups (A), (B), and (C) severally, to be written and handed in on separate papers.*

(A)

1. Translate :—

Cicero, In Catilinam I. and II.

(*a*) Fuisti igitur apud Læcam illa nocte, Catilina: distribuisti partes Italiæ: statuisti quo quemque proficisci placeret: delegisti quos Romæ *relinqueres*, quos tecum educeres: descripsisti urbis partes ad incendia: confirmasti te ipsum jam *esse exiturum*: dixisti paullulum tibi esse etiam, tum *moræ*, quod ego *viverem*. Reperti sunt duo equites Romani, qui te ista cura *liberarent*, et sese illa ipsa nocte, paullo ante lucem, me meo in lectulo interfecturos pollicerentur. Hæc ego omnia, vix dum etiam cœtu vestro dimisso, comperi: domum meam majoribus præsidiis munivi atque firmavi: exclusi eos, quos tu mane ad me *salutatum* miseras, cum illi ipsi *venissent*; quos ego jam multis ac summis viris ad me id temporis venturos esse prædixeram.

(*b*) Quæ cum ita sint, Quirites, vos, quemadmodum jam antea, vestra tecta custodiis vigiliisque defendite: *mihi*, ut *urbi* sine vestro motu ac sine ullo tumultu, satis esset præsidii, consultum ac provisum est. Coloni omnes municipesque vestri, certiores a me facti de hac nocturna excursione Catilinæ, facile urbes suas finesque defendent: gladiatores, quam sibi ille maximam manum et certissimam fore putavit, quamquam *meliore animo* sunt quam pars patriciorum potestate tamen nostra continebuntur. Q. Metellus, quem ego prospiciens hoc in agrum Gallicanum Picenumque præmisi, aut opprimet hominem, aut omnes ejus motus conatusque prohibebit.

2. Show the grammatical construction of the words in Italics in the above extracts.

3. Explain the meaning of:—(1) Tabulas novas. (2) Certare cum usuris fructibus prædiorum. (3) Magno in ære alieno. (4) In ludo gladiatorio. (5) Ex rusticis decoctoribus. (6) Si in hunc animadvertissem. (7) Referre ad senatum. (8) Proximis idibus senties.

(B)

1. Translate :—

Virgil, Æneid, I.

(*a*) Unam, quæ Lycios fidumque vehebat Oronten,
Ipsius ante oculos ingens a vertice pontus
In puppim ferit: excutitur pronusque magister
Volvitur in caput; ast illam ter fluctus ibidem
Torquet agens circum, et rapidus vorat aequore vertex.
Apparent rari nantes in gurgite vasto,
Arma virum tabulæque et Troia gaza per undas.
Iam validam Ilionei navem, iam fortis Achatæ,
Et qua vectus Abas, et qua grandævus Aletes,
Vicit hiems: laxis laterum compagibus omnes
Accipiunt inimicum imbrem rimisque fatiscunt.
(*b*) Illi se praedæ accingunt dapibusque futuris:
Terg ora diripiunt costis et viscera nudant;
Pars in frusta secant veribusque trementia figunt;
Litore aena locant alii flammasque ministrant.
Tum victu revocant vires, fusique per herbam
Implentur veteris Bacchi pinguisque ferinæ.
Postquam exempta fames epulis mensæque remotæ,
Amissos longo socios sermone requirunt,
Spemque metumque inter dubii, seu vivere credant,
Sive extrema pati, nec iam exaudire vocatos.

2. Derive (1) hiems, inimicus, rapidus, ferinæ (what word must here be supplied?) (2) Give the nominative sing. of veribus and viscera.

3. Translate and explain the construction of the following passages: (1) Vivoque sedilia saxo. (2) Iudicium Paridis, spretæque injuria formæ. (3) reliquias Danaum atque immitis Achilli (account for the form "Achilli.)" (4) Explain "veteris Bacchi, etc.," in the second passage for translation.

4. Translate :—

Cæsar, Bell. Gall., Bk. I

(*a*) Divitiacus multis cum lacrimis Cæsarem complexus obsecrare cœpit Ne quid gravius in fratrem statueret: scire se illa esse vera, nec quemquam ex eo plus quam se doloris capere, propterea, quod, quum ipse gratia plurimum domi atque in reliqua Gallia, ille minimum propter adolescentiam posset, per se crevisset; quibus opibus ac nervis non solum ad minuendam gratiam sed prope ad perniciem suam uteretur. Sese tamen et amore fraterno et existimatione vulgi commoveri.

(*b*) Ariovistus his omnibus diebus exercitum castris continuit, equestri prælio quotidie contendit. Genus hoc erat pugnæ quo se Germani exercuerant. Equitum milia erant sex, totidem numero pedites velocissimi

ac fortissimi, quos ex omni copia singuli singulos suæ salutis causa delegerant. Cum his in prœliis versabantur, ad hos se equites recipiebant: hi si quid erat durius concurrebant; si qui graviore vulnere accepto equo deciderat, circumsistebant; si quo erat longius prodeundum aut celerius recipiendum, tanta erat horum exercitatione celeritas ut jubis equorum sublevati cursum adæquarent.

5. Translate the following single passages:—(1) Sementes quam maximas facere ut in itinere copia frumenti suppeteret. (2) trium mensium molita cibaria. (3) Legatos ad Cæsarem mittunt rogatum auxilium. (Explain the word rogatum.)

(C)

1. What are the stem and root respectively of *donum?*

2. Decline *princeps, pes, domus.* Decline together:—*agricola bonus, gladius acer.*

3. Give the form (or forms) for the Gen. and Voc. Sing. of *consilium filius, deus*; Dat. Pl. of *filia, bos, lucus.*

4. Compare the adjectives *magnus, dives, senex, malevolus.* Form and compare adverbs from *miser, bonus, dexter.*

5. Write down in Latin the Cardinals and Ordinals from one to twenty. Decline *duo milia.*

6. How many kinds of *Pronouns* are there? Name them. Decline *is* in the *plural.*

7. Inflect *moneo* in the Imperf. Indic. Act., and Pres. Subj. Pass.; *rego* in the Pres. and Fut. Imperative, Act. and Pass.; *prosum* in the Fut. Indic. Act. and *eo* in the Perf. Subj. Act.

8. Give the Principal Parts of *habeo, duco, scribo, capio, fero, do, seco.*

9. What verbs may take two Accusatives? What constructions follow *parco, suadeo, obliviscor, careo, dignus, interest.*

10. Translate into Latin:—(*a*) *Gaul as a whole is divided into three parts.* (*b*) *The books which you read.* (*c*) *I am persuaded.* (*d*) *A longing (desiderium) for rest (otium).* (*e*) *By only two routes could the Helvetii go out from home.*

GREEK.

WEDNESDAY, JUNE 4TH:—AFTERNOON, 2 TO 5.

Examiners, ... { REV. GEORGE CORNISH, LL.D.
VERY REV. DEAN NORMAN, D.C.L.
A. J. EATON, Ph.D.

(N.B.—The Answers to the Questions in Groups (A), (B) *and* (C) *severally, to be written and handed in on separate papers.)*

(A)

1. Translate, Homer, Iliad, Bk. IV.:—

(*a*) Ὣς ἐφάθ', αἱ δ' ἐπέμυξαν Ἀθηναίη τε καὶ Ἥρη·
πλησίαι αἵγ' ἥσθην, κακὰ δὲ Τρώεσσι μεδέσθην.
ἦτοι Ἀθηναίη ἀκέων ἦν οὐδέ τι εἶπεν,
σκυζομένη Διὶ πατρὶ, χόλος δέ μιν ἀγριος ἦρει·
Ἥρη δ' οὐκ ἔχαδε στῆθος χόλον, ἀλλὰ προσηύδα
Αἰνότατε Κρονίδη, ποῖον τὸν μῦθον ἐείπες.
πῶς ἐθέλεις ἄλιον νεῖναι πόνον ἠδ' ἀτέλεστον,
ἱδρῶ θ' ὃν ἵδρωσα μόγῳ, καμέτην δέ μοι ἵπποι
λαὸν ἀγειρούσῃ, Πριάμῳ κακὰ τοῖό τε παισίν.

(*b*) τόν ῥ' Ὀδυσεὺς ἐτάροιο χολωσάμενος βάλε δουρὶ
κόρσην· ἡ δ' ἑτέρου διὰ κροτάφοιο πέρησεν
αἰχμὴ χαλκείη· τὸν δὲ σκότος ὄσσε κάλυψεν.
δούπησεν δὲ πεσών, ἀράβησε δὲ τεύχε' ἐπ' αὐτῷ.
χώρησαν δ' ὑπό τε πρώταχοι καὶ φαίδιμος Ἕκτωρ·
Ἀργεῖοι δὲ μέγα ἴαχον, ἑρύσαντο δὲ νεκροὺς,
ἴθυσαν δὲ πολὺ πρότερον. νεμέσησε δ' Ἀπόλλων
Περγάμου ἐκ κατιδών, Τρῶασι δὲ κέκλετ' ἀύσας
Ὄρνυσθ' ἱππόδαμοι Τρῶες, μηδ' εἴκετε χάρμης
Ἀργείοις, ἐπεὶ οὔ σφι λίθος χρὼς οὐδὲ σίδηρος,
χαλκὸν ἀνασχέσθαι ταμεσίχροα βαλλομένοισιν.
οὐ μὰν οὐδ' Ἀχιλῆος Ὀϊτιάδης παῖς ἠὐκόμοιο,
μάρναται, ἀλλ' ἐπὶ νηυσὶ χόλον θυμαλγέα πέσσει.

2. Parse carefully the following words:—*ἐπέμυξαν, ἥσθην, μεδέσθην, Διί, ἦρει ἔχαδε, θεῖναι, ἱδρῶ, ὄσσε, κέκλετ', σφί, νηυσί, βάν, πάγε.*

3. Derive and give the meaning of:—*γέρας, πότνια, ἀγκυλομήτης, θᾶσσον, ἀβλῆτα, κλειτήν, ζωστῆρ, χαμᾶζε, νωλεμέως, πρηνίες.* Give words in Latin or English cognate with any of these.

4. (*a*) Name the metre of the above extracts, writing down the scheme. (*b*) Scan the first four verses of ext. (*b*). (*c*) Define *Tmesis*, *Elision*, *Apocope* and *Aphæresis*, giving examples.

(B)

1. Translate, Xenophon, Anabasis, Bk. I.

(*a*) Ἀπολελοίπασιν ἡμᾶς Ξενίας καὶ Πασίων. ἀλλ' ἴυγε μέντοι ἐπιστάσθωσαν ὅτι οὔτε ἀποδεδράκασιν· οἶδα γάρ ὅπη οἴχονται. οὔτε ἀποπεφευγασιν. ἔχω γαρ τριήρεις, ὥστε ἑλεῖν τὸ ἐκείνων πλοῖον· ἀλλὰ μὰ τοὺς θεοὺς οἰκ ἐγωγε αὐτοὺς διώξω, οὐδ' ἐρεῖ οὐδείς, ὡς ἐγώ, ἕως μὲν ἂν παρῇ τις, χρωμαι, ἐπειδὰν δὲ ἀπίέναι βούληται, συλλαβὼν καὶ αὐτοὺς κακῶς ποιῶ καὶ τὰ χρήματα ἀποσυλῶ. Ἀλλὰ ἴτωσαν ἐιδότες, ὅτι κακίους εἰσὶ περὶ ἡμᾶς ἢ ἡμεῖς περὶ ἐκείνους.

(*b*) Καὶ ἤδη τε ἦν μέσον ἡμέρας καὶ οὔπω καταρανεῖς ἦσαν οἱ πολέμιοι. ἠνίκα δὲ δείλη ἐγενετο, ἐφάνη κονιορτὸς ὥστερ νεφέλη λευκή, χρόνῳ δὲ συχνῳ ὕστερον ὥσπερ μελανία τις ἐν τῷ πεδίῳ ἐπὶ πολύ.

(*c*) Ὥρα δὲ πλεῖστα μὲν οἶμαι εἰς γε ὧν ἀνὴρ ἐλάμβανε διὰ πολλά· ταῦτα δὲ πάντων δὴ μάλιστα τοὶς φίλοις διεδίδου πρὸς τοὺς τρόπους ἑκάστου σκοπῶν καὶ ὅτου μάλιστα ὁρῴη ἑκάστον δεόμενον. καὶ ὅσα τῷ σώματι αὐτοῦ κόσμον πέμποι τις ἢ ὡς εἰς πόλεμον ἢ ὡς εἰς καλλωπισμόν, καὶ περὶ τούτων λέγειν αὐτὸν ἔφασαν, ὅτι τὸ μὲν ἑαυτοῦ σῶμα οὐκ ἂν δύναιτο τούτοις πᾶσι κοσμηθηναι, φίλοις δὲ καλῶς κεκοσμημένους μέγιστον κόσμον ἀνδρὶ νομίζοι.

2. Distinguish carefully between the meaning of three verbs, in the first passage for translation, viz., ἀπολελοίπασιν, ἀποδεδράκασιν, and ἀποπεφεύγασιν, and derive ὁμαλῶς, ἐξεκύμαινε, λευκοθωρακες, αὐτομολήσαντες and ψηφίσωνται.

(C)

1. Decline *τιμή*, *δῶρον*, *λέων*, *βασιλεύς*, and *ναῦς*.

2. Decline *ἐγώ*, *εἷς*, *ὅστις*, and the comparative of *μέγας*.

3. Inflect the Future Active (throughout) of *λύω*; the Present Indicative Active of *τιμάω* (giving the contracted forms); the Present Optative Middle of *ἵστημι*. Give all the Active Infinitives of *λείπω*.

4. Give the tense, mood, present indicative and principal parts of the following words: *εἶδον*, *ἔπαθεν*, *λύσαι*, *ἴασι*, *φῆσιν*, *λίπωμαι*.

5. Define the term *tense stem*. What tense-stems are distinguished in the Greek verb?

6. State the principles of Syntax illustrated by the following sentences :—

(*a*) *ταῦτα ἐγένετο, these things happened.*

(*b*) *τὸ πλῆθος ἐψηφίσαντο πολεμεῖν, the majority voted for war.*

(*c*) *νόσον νοσεῖν, to suffer under a disease.*

(*d*) *καλὸς τὸ εἶδος, beautiful in form.*

(*e*) *πολλῷ κρεῖττόν ἐστιν, it is much better.*

7. Distinguish in meaning between *ὁ ἀνὴρ σοφός, ἀνὴρ ὁ σοφός.* Express in Greek : *this man; the same man; we see* (*ὁράω*) *with our eyes* (*ὄφθαλμος*) ; *we do not begin* (*ἄρχω*) *war* (*πολεμός*).

FRENCH.

JUNE 4TH :—MORNING, 10.30 TO 12.30.

Examiners, ... { PROF. P. J. DAREY, LL.D. / REV. PROF. COUSSIRAT, B.D. } Officiers d'Académie.

1. Translate into French :

I had no sooner heard those words than I fell at the feet of his Lordship quite filled with gratitude. I heartily embraced his crooked legs, and I looked upon myself as a man in the way of getting rich. Yes, my child, replied the archbishop, whose speech had been interrupted by my action, I will make you the guardian of my most secret thoughts. Listen with attention what I am going to tell you. I like to preach. The Lord blesses my sermons : they touch sinners, make them reflect on themselves, and to have recourse to penance. I have the satisfaction to see a miser frightened by the images which I present to his cupidity, open his treasures and scatter them with a bountiful hand, to draw a lover of pleasures from his delights, and to fill hermitages with ambitious persons. Those conversions which are frequent should alone excite me to work.

Les homélies de l'Archevêque de Grenade.

2. Translate into English :

Au (*a*) sommet des Alpes une soirée nébuleuse amollit le courage ; je me décidai (*b*) à passer la nuit avec les religieux hospitaliers qui partageaient (*c*) mes pressentiments. Ils ne nous trompèrent point. A six heures ce plateau glacé fut presque enseveli dans les ténèbres ; les nuées poussées par un vent du nord-ouest avec la rapidité d'une flèche tourbillonnaient autour de l'enceinte des rochers ; déjà retentissait le bruit lointain des avalanches, et des atomes de neige serrée, divisée comme la pous-

sière, soit en (*d*) se détachant des montagnes, soit en tombant du ciel, en interceptaient la faible lumière et voilaient tous les objets d'alentour.

Les Religieux du Mont St. Bernard.

3. (*a*) Parse *au:* when do you use it? (*b*) Why *décidai* and not *décidais?* (*c*) And why *partageaient* and not *partagèrent?* Give the rules. (*d*) To how many parts of speech does *en* belong? What is it here?

4. Translate into English:—

LES PLANTES.

Admirez les plantes qui naissent de la terre: elles fournissent des aliments aux hommes sains et des remèdes aux malades. Les espèces et leurs vertus sont innombrables. Elles ornent la terre; elles donnent de la verdure, des fleurs odorifèrantes et des fruits délicieux. Voyez-vous ces vastes forêts qui paraissent aussi anciennes que le monde? Ces arbres s'enfoncent dans la terre par leurs racines, comme leurs branches s'élèvent vers le ciel. Leurs racines les défendent contre les vents, et vont chercher par de petits tuyaux souterrains tous les sucs destinés à la nourriture de leur tige.

I. GRAMMAIRE.

1. Indiquez le genre et formez le pluriel des mots suivants: plume, chapeau, animal, bêtail, genou, enfant, or, orgue, hymne.

2. Quels sont les articles contractés? (Partitive articles). Quand les employez-vous?

3. Conjuguez (*a*) le passé défini du verbe avoir; (*b*) le futur du verbe mourir; (*c*) le présent de l'indicatif du verbe épeler et du verbe aller.

4. Enoncez les règles du participe passé lorsqu'il est conjugué avec les auxiliaires avoir et être. Citez un exemple de chaque règle.

5. Expliquez le sens des deux phrases suivantes: (*a*) La femme que j'ai *vu* peindre; (*b*) La femme que j'ai *vue* peindre.

II. PHRASES USITÉES DANS LA CONVERSATION.

(1) A quelle heure voulez-vous dîner? (2) Voulez-vous des légumes, des choux-fleurs, des petits pois? (3) Quel est le quantième du mois? (4) Ces livres n'ont été déballés que ce matin. (5) Je suis porteur d'une lettre de change tirée sur vous par votre correspondant de Londres.

(6) Motion to the driver to stop. (7) Have you been on board to secure your berth? (8) How long shall we stop here? (9) For a few years to come, we shall remain here. (10) These beauties of style baffle the zeal of translators.

DICTÉE (*for the Examiner only*).

Un soir, comme la pluie tombait à flots, on dit qu'une vieille femme, qui passait dans le pays pour sorcière, et qui habitait une pauvre cabane dans la forêt de Saint-Germain, entendit frapper à sa porte ; elle ouvrit, et vit un cavalier que lui demanda l'hospitalité. Elle mit son cheval dans une grange et le fit entrer. A la clarté d'une lampe fumeuse, elle vit que c'était un jeune gentilhomme. La personne disait la jeunesse, l'habit la qualité. La vieille femme alluma du feu et demanda au gentilhomme s'il désirait manger quelque chose. Un estomac de seize ans est comme un cœur du même âge, très avide et peu difficile. Le jeune homme accepta. Une bribe de fromage et un morceau de pain noir sortirent de la huche ; c'était toute la provision de la vieille. (F. SOULIÉ.)

GERMAN.

Examiner..... P. T. LAFLEUR, M.A.

I. Translate :

„Aller guten Dinge ſind drei," dachte der Wolf, und kam zu einem dritten Schäfer.

„Es geht mir recht nahe," ſprach er, „daß ich unter euch Schäfern als das grauſamſte Thier verſchrieen bin. Dir, Montan, will ich jetzt beweiſen, wie Unrecht man mir thut. Gib mir jährlich ein Schaf, ſo ſoll deine Heerde in jenem Walde, den Niemand unſicher macht als ich, frei und unbeſchädigt weiden dürfen. Ein Schaf? Welche Kleinigkeit! Könnte ich großmüthiger, könnte ich uneigennützigerhandeln? Du lachſt, Schäfer? Worüber lachſt du denn?"

„O über nichts. Aber wie alt biſt du, guter Freund?" ſprach der Schäfer.

„Was geht dich mein Alter an? Immer noch jung genug, dir deine ungiften Lämmer zu würgen."

„Erzürne dich nicht, alter Ifegrimm! Es thut mir leid, daß du mit deinem Vorſchlage einige Jahre zu ſpät kommſt. Deine ausgebiſſenen Zähne verrathen blos um ſo deſto gemächlicher und mit deſto weniger Gefahr nähren zu können."

1. State the difference between Dinge and Dinger.

2. kam zu einem dritten Schäfer. Translate: They say he has come to Montreal.

3. Give the superlative of nahe.

4. Give the plural of Thier, Schaf, Gefahr.

5. Unrecht. Translate: He said he was wrong.

6. Give the principal parts of verſchrieen, beweiſen, geht, verrathen.

7. Conjugate, throughout, the present indicative of dürfen, and können.

8. Worüber lachſt du denn? Translate: Why were you laughing at him?

9. Einige Jahre. Decline: Some high old trees.

II. Translate: Do you know these men? The beams (Strahl) of the sun are very warm. 3. The cocks (Hahn) have spurs (Sporn) 4. Do you know the name of the gods of the Romans? (Römer). 5. The regiments in our city lost (verlieren) many officers in the last battle (Schlacht f.). 6. Among (unter) the wounded (verwunden) were seven captains (Hauptmann n.) four majors and two colonels. 7. They said, the merchants' ships were lost. How many years have you been in this country? 9. Those boards (Brett, n.) are five feet long and four inches (Zoll) wide (breit). 10. The merchant has sent me three pounds of sugar.

III. Decline throughout: Wille, Fels, Herz.
State the difference between: ein Paar and ein paar.

IV. What cases do the following prepositions govern, aus, mit, für nach, gegen, um, ohne, bei, wider, zu?

V. Name six prepositions which govern the accusative and the dative.

VI. Decline Jesus Christus, daſſelbe Buch, welcher ſchöne Garte ein ſolches Haus, ſolch eine Frau.

VII. Translate: 1. What kind of ribbons do you want? (brauchen) Which are your horses? 3. What are your conditions (Bedingung) 4. Are those boys obliged to go to school to-day? 5. We were not permitted to visit our friends every day. 6. My father would have sent (ſchicken) me to Paris, if I had been old enough. 7. Both my sisters have arrived (angekommen). 8. They have lost all their money. (Geld. n.) 9. All the boys were at school this morning, but some of the girls were absent (abweſend). 10. With all your sorrow (Kummer n.) 11. I was obliged to go to the post-office (Poſt, f.). 12. The butcher (Fleiſcher) has been obliged to sell the meat. 13. You should not have believed (glauben) him (dat:). 14. This man would have become a soldier.

GEOMETRY.

WEDNESDAY, JUNE 4TH:—MORNING, 9 to 10.30.

Examiners, ... { REV. PRINCIPAL ADAMS, D.C.L. / G. H. CHANDLER, M.A.

Only two questions in each division to be answered.

I.

1. Draw a straight line perpendicular to a given straight line from a given point without it.

2. Define parallel straight lines, and prove that if a straight line fall on two other straight lines and make the alternate angles equal, the two straight lines shall be parallel.

3. Parallelograms on equal bases and between the same parallels are equal.

II.

4. ABC is a triangle, the square on AB is equal to the squares on AC, BC; prove that C is a right angle.

5. Divide a given straight line into two parts, so that the rectangle contained by the whole line and one of the parts may be equal to the square on the other part.

6. A straight line is divided into two parts, prove that the squares on the whole line and on one part are together equal to twice the rectangle contained by the whole and that part, together with the square on the other part.

III.

7. If a straight line drawn through the centre of a circle bisect a straight line in it which does not pass through the centre, it shall cut it at right angles; and if it cut it at right angles it shall bisect it.

8. On a given straight line to describe a segment of a circle which shall contain a given angle. (Three figures.)

9. In question 5 show that the rectangle contained by the two parts is equal to the difference of the squares on those parts.

ALGEBRA.

TUESDAY, JUNE 3RD:—MORNING, 9 to 10.30.

Examiners, ... { REV. PRINCIPAL ADAMS, D.C.L. / G. H. CHANDLER, M.A.

1. Divide $ax^3 + (2a^2 + ac - b^2)x^2 + (2a^2c - 2ab^2 - b^2c)x - 2ab^2c$ by $x + 2a$.

2. Show that
$(b-c)^2 + (a-b)(a-c) = (c-a)^2 + (b-c)(b-a) = (a-b)^2 + (c-a)\cdot c-b.$

3. Any term may be transferred from one side of an equation to the other, provided that its sign is changed. Why?

4. Find the factors of $x^2 - x - 132$, $x^4 - 2x^2 - 8$, $x^3 - 3x^2 - 18x$, $3x^2 - 10x + 3$, and $27 + 8x^3$.

5. Reduce the fraction $\frac{x^3 - 23x + 10}{5x^3 - 23x^2 + 4}$ to its lowest terms.

6. Simplify $\left\{\frac{x}{1+x} + \frac{1-x}{x}\right\} \div \left\{\frac{x}{1+x} - \frac{1-x}{x}\right\}$

7. Solve the equation $\frac{3x+1}{4} - 2(6-x) = \frac{5x-4}{7} - \frac{x-2}{3}$.

8. Find x and y from the equations:
$b^2x - a^2y = o$, $bx + ay = a + b$.

9. The sum of the digits of a number of two digits is 10, and the number formed by reversing the digits is one less than twice the original number. What is the number?

TRIGONOMETRY.

FRIDAY, JUNE 6TH:—MORNING, 10.30 to 12.

Examiners,..... ..... { REV. PRINCIPAL ADAMS, D.C.L.
G. H. CHANDLER, M.A.

1. How are angles measured in Trigonometry? Give the figure for an angle of 40°, of 140°, of −40°, of 240°, and in each case give the sign of the sine.

2. If $\sin x = \frac{3}{4}$, find $\tan x$ and $\operatorname{cosec} x$. If $\tan y = \frac{3}{4}$ find $\sin y$ and $\sec y$. If $\tan z = 0$, find $\sin z$ and $\cos z$.

3. Prove by the help of figures that $\cos 60° = \sin 30°$ $\sin 150° = \frac{1}{2}\sin 90° = \sin^2 45°$

4. Prove that $\sec^2 A = \tan^2 A + 1$. Deduce a similar relation between the cosec and the cotangent. Define the six Trigonometrical ratios of an angle. Which two ratios can have any values? Which cannot go beyond the limits + 1 and − 1? Which two cannot be between the last named limits?

5. Prove $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$.

6. A flag-staff is fixed on the top of a column; the elevation of the top of the column is 30°, that of the top of the flag-staff is 60°. Show that the top of the flag-staff is thrice as far from the ground as the top of the column.

NATURAL PHILOSOPHY.

SATURDAY, JUNE 7TH :—MORNING, 12 TO 1.30.

Examiner,.....REV. PRINCIPAL ADAMS, D.C.L.

[Answer seven questions, at least two from each part.]

I.

1. Find the position of the centre of gravity of an irregular flat board, of a Triangle, of a Parallelogram, of a Circle, also of five points in a straight line, their weights being as 5, 4, 3, 2, 1, and their distances from a fixed point on the straight line being 1, 2, 3, 4, 5 respectively.

2. Name and describe the three kinds of levers; describe and draw figures for the three systems of pulleys; find the ratio of the Weight to the Power in the wheel and axle.

3. State the proposition known as the Parallelogram of Forces. State the equivalent proposition for moments, defining a moment. Can the forces 3, 4, 7 produce equilibrium?

II.

4. Two bodies start from the same point, and move uniformly with the same velocity along straight lines inclined at 60°; compare the distance between them after the lapse of any time with the distance each has described.

5. Find the space described by a falling body in 4 seconds, in the 4th second, and in a quarter of a second.

6. What is the unit of work done against gravity? Compare the work done when two bodies are thrown vertically upwards with velocities as 1 : 2 respectively.

III.

7. Describe what is meant by the buoyancy of water; prove that when anything is weighed in water it will suffer a loss of weight exactly equal to the weight of its own bulk of water. What are the conditions of floating?

8. Draw and describe an air pump, a water pump, and a syphon.

9. A metal, whose specific gravity is 15, is mixed with half the volume of an alloy whose specific gravity is 12; find the specific gravity of the compound.

GEOMETRICAL AND FREEHAND DRAWING.

FRIDAY, JUNE 6TH :—2 TO 5 P.M.

Examiner,.....C. H. McLEOD, MA.E.

1. Given a point and a straight line. Draw a line through the point parallel to the given line. Through the same point draw a line to meet the given line at an angle of 60°.

2. There are three straight lines which measure respectively 1.5 in., 2 in. and 2.4 in., find a fourth proportional. From these four lines construct two rectangles of equal area, the sides of the one not being equal to the sides of the other.

3. The sides of a right-angled triangle measure respectively 1 in. and 2 in. Draw the circle which will pass through the two acute angles and touch (be tangent to) one of the sides.

4. Construct a regular hexagon, and divide it into three equal parts by lines drawn from one of the angles.

5. The major and minor axes (greatest and least diameters) of an ellipse measure respectively 3 in. and 2 in. Construct the ellipse.

6. Make a freehand copy, in outline of the ornament before you. Make your drawing about one quarter size.

7. Outline a design for a border or moulding.

8. Sketch the perspective of a cube when at a short distance to the left and above the level of the eye. The upright faces of the cube make about equal angles with the picture plane. Show the vanishing points.

9. Make a freehand drawing of the objects before you as they appear from your point of view :—

(*a*) A model of a flight of steps.
(*b*) An hexagonal pyramid standing on a circular base.

NOTE.—Omit question 7 or question 8. In the problems 6, 7, 8 and 9 do not use any instrument whatever; the questions are for *strictly freehand* work. The first five questions are instrumental; show all construction lines as light or dotted lines, and obtain all results by *direct construction*, not by *trial*.

ENGLISH LANGUAGE.

SATURDAY, JUNE 7TH:—AFTERNOON, 2 TO 3.30.

Examiners,..... { CHAS. E. MOYSE, B.A.
REV. F. G. SCOTT, M.A.
P. T. LAFLEUR, M.A.
REV. G. A. SMITH, B.A.

[Answer the questions of group (A); one question of group (B); any two questions of group (C); and any four questions of group (D).]

A.

1. Analyse: "How much do you want then?" he said, speaking as if the words burnt his lips.

2. Rewrite the following sentences in correct form, and give reasons for your corrections:

(*a*) While walking in my garden, an idea suddenly occurred to me.
(*b*) He drew a line of about six inches long.
(*c*) I cannot tell you how much pains have been spent on him.
(*d*) I hoped to immediately succeed.
(*e*) We trust that by supplying a genuine and most superior class of article to increase the confidence so many years bestowed on us.
(*f*) He was as rich or even richer than his father.
(*g*) Man never is but always to be blest.

B.

1. Form abstract nouns from Christ, hate, red, God; diminutives from sack, hire, dear, pike trump; augmentatives from ball, flask. Indicate the etymological meaning of spinster, daughter, sire.

2. Use your knowledge of older English to indicate important facts regarding the form or the meaning of the following words:—what, those, shall, yes, piecemeal, hard (adverb), naught.

C.

1. (*a*) Write a list of Attribute Adjuncts, and give one example of each. Show that one may be replaced by another; *or* (*b*) write a list of Adverbial Adjuncts, and give one example of each. Show that one may be replaced by another.

2. Distinguish between cloths and clothes; shots and shot; fishes and fish; indexes and indices. Write two nouns which are plural in appearance, and notice their derivation; also two nouns used only in the plural.

3. Distinguish carefully between the uses of the Participle and the Gerund, and sketch the origin of Prepositions.

D.

1. Show that poetry exists in terms used in architecture.

2. Show that the following words have been elevated in meaning: apostle, paradise, regeneration; also that the following have deteriorated: prude, simple.

3. Write on "needless scruples about words."

4. Are word-inventions in comedy new words properly so called? Give reasons for your answer, and illustrate from Trench.

5. Distinguish between ship and nave; illegible and unreadable; foresight and providence; boyish and puerile; genuine and authentic. Take *affront*, *supercilious* and *subtle* to show that words "which are now employed only in a figurative sense did yet originally rest on some fact of the outside world."

ENGLISH LITERATURE.

THURSDAY, JUNE 5TH:—MORNING, 9 TO 10.30.

Examiners,..... ..... { REV. F. G. SCOTT, M.A. / CHAS. E. MOYSE, B.A. / REV. G. A. SMITH, B.A. / P. T. LAFLEUR, M.A.

[Answer two questions, and not more, from each group.]

A.

I. What is Literature? Why may we English be proud of ours?

II. Shew how the literary activity of the reigns of Elizabeth, Anne, and at the beginning of the present century, was the outcome of political events. Name the chief writers of these periods.

III. Give the authors' names, and a brief description of the following works:—

"Canterbury Tales."
"Hudibras."
"Rape of the Lock."
"Adonais."
"Idylls of the King."

B.

IV. What was the origin of the English Drama? Give a slight sketch of its rise and final decline in the reign of Charles II.

V. Describe the character and motives of Brutus.

VI. Write short notes on, or explain :—

(1) "Beware the Ides of March." Julius Cæsar, Act I-2.
(2) "It is the bright day that brings forth the adder" Act II-2.
(3) "There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries." Act IV.-3.

C.

VII. Write a short life of Sir Walter Scott.

VIII. What Celtic traits are visible in his poetry?

IX. Explain the following passages from the "Lady of the Lake" :—

(1) "And while the fiery cross glanced like a meteor around."
(2) "Ill fared it then with Roderick Dhu,
That on the field his targe he threw."
(3) "I guess his cognizance afar."

HISTORY.

THURSDAY, JUNE 5TH :—AFTERNOON, 2 TO 3.30.

Examiners,..... PAUL T. LAFLEUR, M.A.
REV. G. A. SMITH, B.A.
CHAS. E. MOYSE, B.A.
REV. F. G. SCOTT, M.A.

(N.B.—Candidates will answer not more than three questions from any one group, and must select from *either* A and B, *or* A and C.)

A.

1. Write short notes on :—Solon, Pericles, Pisistratus, Pyrrhus, Cicero, Spurius Cassius.

2. State the causes of the Peloponnesian war, and give with their dates two naval engagements and two battles on land.

3. Give a short account of the military organisation of the Macedonians under Philip and Alexander; *or* a short account of the founding of the Roman Empire.

4. Explain :—Ostracism, Delphic Oracle, Long Walls, Censors, Dictator Prætorian Guards.

B.

5. Who were:—Belisarius, Clovis, Gessler, The Great Condé, Mazarin, Maria Theresa?

6. Give some idea of Domestic Life in Imperial Rome; *or* of Life in Germany at the time of the Reformation.

7. Tell *briefly* what you know of:—The Seven Years' War, the Fall of Constantinople, the Meeting of the States General.

8. State the causes of the Thirty Years' War, and give the names of three potentates and four great generals who were concerned in it; *or* give an account, in brief outline, but with dates, of the war of Napoleon in Spain.

C.

9. Tell briefly what you know of:—Gideon, Ahab, Hezekiah, the Maccabbees, Herod the Great, Titus.

10. Trace rapidly the wanderings of the children of Israel from the destruction of Pharaoh's host to the death of Moses. Add, if you can, an outline map of the route.

11. Give a *brief* account of:—the Building of Solomon's Temple, the Babylonish captivity, the establishment of kingly rule in Israel, the Fall of Jericho.

12. Describe the striking features of the Jewish character as shown in their dealings with (*a*) their guides, (*b*) their kings, (*c*) with conquered people; *or* write an outline account of the Ten Plagues of Egypt.

GEOGRAPHY.

THURSDAY, JUNE 5TH:—MORNING, 10.30 TO 12.

Examiners,..... { REV. G. ABBOTT SMITH, M.A. / CHAS. E. MOYSE, B.A. / REV. F. G. SCOTT, M.A. / PAUL T. LAFLEUR, M.A.

(Answer *two* questions, and not more, from each group.)

I.

1. Distingush between Astronomical, Physical and Political Geography. How would you prove the rotundity of the earth?

2. Define and explain the terms,—tropic, zodiac, meridian, perihelion. What is meant by the *climate* of a place, and what are the chief elements which determine its character?

3. Write a brief description of:—

(*a*) The five great varieties or families into which mankind is usually divided.

(*b*) The three chief forms of government in use among men.

II.

4. Name, in the order of their relative area, the continental divisions of the Eastern Hemisphere. Name and describe briefly the situation of the principal islands and island groups in Asia and in Oceania.

5. What and where is each of the following:—Tarifa, Sorata, Everest, the Pampas, Gobi, Stromboli, Barrow, Malaga, Obi, Ormuz, Sound, Orinoco, Dwina, Yukon, Nyassa, Titicaca?

6. Enumerate the colonies and dependencies of the British Empire. Name any two foreign possessions belonging to each of the following countries:—France, Spain, Portugal, Holland.

III.

7. What is the area and the approximate population of the Dominion of Canada? Give the names and exact boundaries of its different provinces and territories.

8. Draw a map showing the main features of the railway system in the Province of Quebec. Name the counties comprised in the "Eastern Townships," and give the county town of each.

9. Which are the principal mountains and rivers east of the Mississippi in the United States? What States border on the Dominion of Canada?

BOTANY.

THURSDAY, JUNE 5TH:—AFTERNOON, 2 TO 3.30.

Examiner,.....D. P. PENHALLOW, B.Sc.

I.

1. State what organs enter into the composition of a flower, and show the order in which they occur.

2. Explain the structure of an embryo plant, and show in what it is contained

3. Explain, as clearly as you can, where and in what form nourishment is provided for the young plant.

4. What is meant by terms Mono- Di- and Poly-Cotyledonous? Give examples of each.

II.

5. What is a bud? How many kinds are there?

6. Give a simple classification of plants according to duration? Examples.

7. Explain the characteristics of air plants and parasites. Examples.

8. Explain the nature of the following, with examples:—*Stolon*, *Runner*, *Sucker*, *Tuber*, *Bulb*.

III.

9. Explain the general structure of the leaf.

10. Give a concise account of the functions of the leaf.

11. Distinguish between a *Spike*, *Head*, *Umbel*, *Raceme*, *Cotkin*.

12. Describe *fully* the plant given.

The Candidate will answer two questions in each division. Number 12 is imperative.

The Examiner will please furnish a COMPLETE SPECIMEN of any common flower.

ELEMENTARY CHEMISTRY.

SATURDAY, JUNE 7TH:—MORNING, 1½ HOUR.

Examiner,..... .....B. J. HARRINGTON, B.A., PH.D

NOTE.—Answer two questions from each group.

I.

1. Explain the difference between elements and compounds.

2. How does Hydrogen occur in nature? How would you prepare it in the laboratory? What are its properties?

3. Why do we generally use solutions where we wish to study the chemical action of substances upon one another?

II.

1. What do you understand by the expressions *chemical work* and *chemical energy*?

2. How may Nitrogen be obtained from the air? What are its properties?

3. What takes place when an acid and a base are brought together? Illustrate by means of two equations.

III.

1. What is flame? Why do some flames give light and others not? What is Water-gas?

2. What two steps are necessary in order to get Chlorine from Common Salt? How is the gas made when required for commercial purposes?

3. Where does Sulphur Dioxide occur in nature? How is it made in the laboratory? What are its properties and uses?

PHYSIOLOGY AND HYGIENE.

FRIDAY, JUNE 6TH:—MORNING, 9 TO 10.30.

Examiners,..... { J. WM. DAWSON, LL.D. / B. J. HARRINGTON, PH.D.

NOTE.—*Answer three questions only from each group.*

Group A.

1. Describe the organs of taste and smell, and explain their practical uses.

2. How may kinds of food be classified, with reference to their uses in nutrition and heat-producing?

3. What is the principal property of muscular fibre? How is it affected by exercise, disuse, excess or want of nutrition?

4. The bones of the back and chest, what are they, and what their uses and liability to injury?

Group B.

1. State the general functions of the brain and conditions necessary to its healthy action.

2. Explain the action of the heart and the effects of stimulants on it.

3. Explain the processes of digestion in the stomach and of absorption in the intestines.

4. What are the uses of breathing? Explain the effects of air and exercise on the organs of respiration and through them on the body.

5. What is alcohol, and its effects on brain, blood, stomach, liver?

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